THE RAILWAY GAZETTE

A Journal of Management, Engineering and Operation

INCORPORATING

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An index to the eightieth volume of The Railway Gazette, *covering the issues from January 7 to June 30, 1944, has been prepared, and is now available free of charge on application to the Publisher.*

DIESEL RAILWAY TRACTION SUPPLEMENT

The August issue of The Railway Gazette *Supplement, illustrating and describing developments in Diesel Railway Traction, is now ready, price 1s.*

GOODS FOR EXPORT

The fact that goods made of raw materials in short supply owing to war conditions are advertised in this paper should not be taken as indicating that they are available for export

POSTING "THE RAILWAY GAZETTE" OVERSEAS

We would remind our readers that there are many overseas countries to which it is not permissible for private individuals to send printed journals and newspapers. The Railway Gazette *possesses the necessary permit and facilities for such dispatch.*

We would emphasise that copies addressed to places in Great Britain should not be re-directed to places overseas

TO CALLERS AND TELEPHONERS

Until further notice our office hours are :
Mondays to Fridays 9.30 a.m. till 5.30 p.m.
The office is closed on Saturdays

ANSWERS TO ENQUIRIES

By reason of staff shortage due to enlistment, we regret that it is no longer possible for us to answer enquiries involving research, or to supply dates when articles appeared in back numbers, either by telephone or by letter

ERRORS, PAPER, AND PRINTING

Owing to shortage of staff and altered printing arrangements due to the war, and less time available for proof reading, we ask our readers' indulgence for typographical and other errors they may observe from time to time, also for poorer paper and printing compared with pre-war standards

Holiday Rush Closes Paddington Station

FOR the first time in its history Paddington Station had to be closed for three hours last Saturday morning, the platforms and "Lawn" being packed with would-be travellers. Soon approaches were densely crowded, and bookings had to be suspended from the Underground and tubes to prevent more passengers emerging from the subways and adding to the crowds in the main-line station. There was similar congestion at Euston and Waterloo and other stations, but not quite to the same extent as at Paddington. It is regrettable that, notwithstanding its competence in other directions, the Ministry of War Transport has not shone in its dealings with passenger rail travel. The same trouble has occurred at every holiday period during the war. Whilst refusing consistently to take any step to ration travel, it failed to give the railways a free hand to cope with any situation that might arise. It has contented itself with appeals and admonitions regarding unnecessary travel, apparently hoping that a Government Department could accomplish what no one else had succeeded in doing, namely, getting a quart into a pint pot. Now that practically everything is rationed, the public, large numbers of which are enjoying comparatively high incomes, is left with three channels on which to dispose of surplus money: war savings, amusement, and travel. Although it is probably too late in the war to introduce travel rationing, war savings would probably have benefited had this been done earlier. It may of course be argued that the Government has not lost anything in that respect in view of its surplus of £129,400,000 on the railways. Advocates of railway nationalisation or more Government control should really be perturbed. Recent experience will make the public think, possibly quite unfairly, that it has obtained a foretaste of what travel conditions would be like if our railways were nationalised, or Government control continued after the war.

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Home Railway Interim Dividends

As expected, the interim dividends of the four main-line railway companies and the London Passenger Transport Board are at the same rates as those of a year ago. G.W.R. consolidated ordinary receives 2 per cent. and Southern preferred ordinary 2½ per cent. The 4 per cent. second preference of the L.N.E.R. is the most junior stock of that company to receive a payment, which is again 1 per cent. No distribution is made on L.M.S.R. ordinary or Southern deferred, which at the end of last year received 2½ per cent. and 2 per cent. respectively. The interim payment of 1¼ per cent. on London Transport "C" stock is repeated. The fixed rental agreement under which the railways are operating leaves little scope for variations in dividends; any additions can accrue only from the working of ancillary businesses, and cannot be calculated sufficiently closely on results for six months. The home railway market of the Stock Exchange offers practically the highest average yields obtainable, but this is unlikely to weigh greatly with investors, in view of future uncertainties. The vastly increased total net revenues, of which the Government takes the lion's share, have been earned at the cost of abnormal wear and tear on the property of the companies, and there has been no indication of how post-war transport problems will be dealt with as a whole.

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A Further Blow to Argentine Railways

It is reported from Argentina that the National Railway Office has ordered the railway companies to deposit with the Central Bank, before August 15, a total of 64,206,000 pesos (some £3,800,000). According to Reuters a note addressed to the companies has stated that this sum corresponds to retentions "unduly effected" on railway workers' wages, and that the National Railway Office alleges that the companies gave an illegal destination to profits obtained from the increase in tariffs authorised by Law 10650 so as to demonstrate the difficult economic situation and thus evade the wage increases which were the principal reason that the tariff increase was authorised. It also alleges other irregularities on the part of the companies, and says that study of this has made necessary Government reconsideration of the railway problem. The British Argentine Railway Committee in London, referring to the National Railway Office note, has announced that a full statement of the facts is in course of preparation, and will be made public as soon as it is completed.

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British and United States Trade with Argentina

Some pertinent comments on future trade relationships between Argentina on the one hand and the United States of America and Great Britain on the other, are made by Mr. Philip Guedalla, in a review of a book, "South American Journey," by Mr. Waldo Frank, in a recent issue of *John*

O'London's Weekly. Mr. Guedalla, who has travelled widely throughout South America and who is Chairman of the Ibero-American Committee of the British Council, points out that the destinies of nations are determined rather by the direction of their trade than by an accident of geography, and that economically the republics of the River Plate, Argentina and Uruguay, belong rather to the Old World than the New. Europe needs their meat and grain, and it would not be the slightest use for Buenos Aires and Montevideo to ship their food-stuffs to New York as the United States can find its next meal infinitely nearer home in the stockyards of Chicago and the wheat-fields of the Middle West. There would be no economic sense in duplicating their home supply with expensive imports. The market for these products is Europe, and to sell them the republics must receive goods from Europe in exchange. For the present, perhaps, political rather than economic factors dominate Anglo-Argentine affairs, but ultimately there is little doubt that the hard facts of commerce will prevail.

Joint Traffic Arrangements in Ulster

At the annual general meeting of the Belfast & County Down Railway Company, held in Belfast on February 24 last, the Chairman reviewed the negotiations which were then proceeding between the transport undertakings and the Government, and referred to the question of co-ordination and interworking between road and rail which was envisaged under the Act of 1935. Many meetings, he said, had been held between the interested parties without unanimous agreement, and the position then was that the Great Northern Railway, jointly with the B. & C.D.R., had submitted a proposal to the Government of Northern Ireland to make effective the 1935 Act as from a date to be decided by the Government, with the railway companies keeping an open mind on the division of the pool receipts. The Northern Ireland Road Transport Board and the Northern Counties Committee of the L.M.S.R. had not agreed to that proposal, as they favoured a scheme of amalgamation. Meanwhile, the friendliness between the G.N.R. and the B. & C.D.R. has resulted in closer traffic co-operation between the two companies, under a scheme which came into operation on August 1, whereby the services of the two railways will be planned jointly, under the control of Mr. H. S. Knott, who was appointed Traffic Manager of both companies as from that date. (*See personal paragraph, page* 115).

Overseas Railway Traffics

Political events in Argentina have brought about a decided setback in the prices of securities of British-owned railways in that country. On the other hand, traffics in the second and third weeks of the new financial year have expanded substantially, although the threatened new expenditure may well discount this improvement. For the fortnight the Central Argentine increase in gross receipts is as much as £102,360, and that of the Buenos Ayres Great Southern is £77,040. The Buenos Ayres & Pacific is £55,200 up in the two weeks, and the improvement in Buenos Ayres Western traffics for the same period is £32,520. Standard-gauge lines are sharing in the advance, the Entre Rios with an increase of £7,764 and the Argentine North Eastern with one of £4,326. Brazilian railway receipts continue their rapid advance, accompanied undoubtedly by a rise in expenditure. To date in 1944 the Great Western of Brazil increase in traffics is £180,500, and that of the Leopoldina is £336,292.

	No. of week	Weekly traffics £	Inc. or dec. £	Aggregate traffic £	Inc. or dec. £
Buenos Ayres & Pacific*	3rd	112,200	+29,700	333,960	+55,560
Buenos Ayres Great Southern* ...	3rd	174,300	+44,940	510,900	+51,300
Buenos Ayres Western*	3rd	63,360	+14,640	189,780	+30,480
Central Argentine*	3rd	166,254	+54,273	522,807	+138,087
Canadian Pacific	27th	1,215,400	−29,400	34,547,000	+3,722,200

* Pesos converted at 16¼ to £

The Canadian National aggregate gross earnings of £42,715,800 for the first six months of 1944 show an increase of £619,000, but the aggregate net earnings of £8,196,600 are £790,400 lower than those for the first half of 1943.

Scottish Tourist Industry

The Scottish Council on Industry has completed the formation of a committee appointed to investigate the whole question of the tourist and holiday resources and facilities of Scotland. This step has been taken on the initiative of Mr. Thomas Johnston, Secretary of State for Scotland, with a view to a comprehensive inquiry, sponsored by the Government, into the subject. Speaking at a recent luncheon in Glasgow in connection with the opening of a school of hotel management in the city, at which Mr. Arthur Towle, Controller of L.M.S.R. Hotel Services, presided, Mr. Johnston said that if the innumerable sight-seeing attractions of Scotland were developed, and if clean, cheap, and adequate hotels were provided along with proper transport facilities, he was perfectly certain they could add greatly to the economic advantages of the country. He suggested to hotel-keepers that they should have their menu cards made understandable to common folk. Mr. Arthur Towle said the fact had to be faced that Scotland, and England as well, with certain notable exceptions, was very much behind other countries with regard to hotel accommodation, and certainly behind them in hotel management. The school, which was being organised by the Scottish Division of the Hotels & Restaurants Association, in conjunction with the Commercial College, Glasgow, would give young people not only a chance of a first class commercial education, but, side by side and in parallel, they would be taught the rudiments of the hotel business.

The Railways of the Guianas

The only remaining colonial possessions of European Powers in South America are on the North Coast, namely, the three Guianas—British, Dutch, and French. The combined area is about twice that of Great Britain, of which one half is British and the balance divided in the approximate proportions of Dutch 5 and French 3. The eight railways in the three colonies are all isolated lines, totalling but 230 miles and having no fewer than five different gauges. Four of the railways, comprising all but 37 of the mileage, are owned by the Governments. The private railways are in effect industrial lines, although they carry whatever public traffic, both passenger and goods, which offers. The isolation of all the lines in the Guianas, both from one another and also from any railways in neighbouring countries, makes it most unlikely that they will develop into "systems." Brief details, with maps of the various railways, are included in an article in this issue (page 112). From the historical viewpoint it is of interest to note that the first section of the Demerara Railway is the oldest railway in South America.

Indian Permanent Way

The article on page 109 in this issue emphasises that a very high percentage of the route-mileage in India is single line. Nevertheless, the traffic carried is often heavy, and is made possible by interlocking and frequent crossing (passing) stations. The main lines are, therefore, well occupied night and day. They are usually ballasted to a full section with broken stone, but, in Bengal and other parts devoid of stone, the secondary lines have overburnt broken brick ballast, which, though lighter and not so enduring as stone, is not a bad substitute. Dust is one of the great curses of railway travel in the dry season, and an opened-out length of road adds greatly to the nuisance. With the D. & O. cast-iron plate and similar tracks, in which gauge is maintained by a tie-rod, one of the difficulties of the maintenance gangs is to retain strict gauge. This is because the slightest deviation from the horizontal of the bottom of the plate—caused by uneven packing—tends to move the jaws of the plate either outwards or inwards, as the whole plate with jaws is free to rotate or tilt transversely to the track, owing to there being only a flexible and no rigid connection between the plates.

Rails and Sleepers in India

Though there is a marked tendency to use more and more metal sleepers in some parts of India, the wooden type is still standard in northern and eastern provinces. The commonest timbers are sal, treated indigenous soft-woods, and to a smaller extent Burmese hardwoods such as pynkado, and even Australian woods. Large quantities of chir and other Himalayan conifers are creosote-treated on the North Western Railway, as only impregnated softwoods and hardwoods will stand up to the ravages of white ants and the climate. For 5-ft. 6-in. gauge lines the standard sleeper cross section is 10 in. x 5 in., and the length 9 ft.; several types of bearing plate are in use for the standard 90-lb. and 75-lb. flat-bottom rails. On metre-gauge lines the standard flat-bottom rails are 60 lb. and 50 lb. to the yard. Incidentally, the measurement units in India are the foot and the 100-ft. chain. Four-bolt fishplates and screw—or dog—spikes are standard practice for all sections of rail.

The Pullman Separation Terms

The terms laid down in the Decree of the Federal District Court at Philadelphia for the separation of the manufacturing and car operating subsidiaries of Pullman Incorporated—the Pullman-Standard Car Manufacturing Company and the Pullman

Company respectively—are very drastic. If Pullman elects to continue in the operating business, it must be prepared to service railway-owned sleeping cars on reasonable terms, if so requested, and also to furnish (and service) cars to any railway which may also be running its own cars or those of a third party. Cars must be furnished to meet peak or seasonal demands, irrespective of whether or not the railway concerned has a contract with Pullman. If the operating interests are retained, the Pullman Company may not manufacture cars; and if the manufacturing side is chosen, Pullman-Standard will not be permitted to undertake the servicing of cars. Any orders already placed by railways with Pullman-Standard for the manufacture of passenger cars may be cancelled by the railways within 60 days, unless construction of the cars had already begun; and contracts between the Pullman Company and Pullman-Standard for the building of cars for Pullman operation are also rendered void unless construction has begun. From the date of the judgment to the date of the separation, the Pullman Company is required to ask for competitive bids for all new cars that it requires to carry on its service.

The Pullman Company's Own Case

Some trenchant comments have been made by Mr. Daniel A. Crawford, President of Pullman Incorporated, on the Decree of the Philadelphia District Court. He points out that such a Decree limits the right of a contractor to make for himself the tools in which he invests for the purpose of carrying out his work, and that, if this principle is carried to its logical conclusion, no national institution whose service has become generally accepted will any longer be able to obtain the economies and score the technical advances secured by making for itself the tools best adapted to its trade. What these technical advances have been in Pullman history is witnessed by the fact that Pullman was responsible for introducing into the United States the first all-steel sleeping cars, the first enclosed vestibule between cars, the first electrically-lighted train, the first air-conditioning of a passenger car, and the first lightweight sleeper. Furthermore, the Court found that the Pullman Company "did not at any time engage in predatory practices, nor take any action to oppress or impede the business of any other sleeping car company"; on the contrary, the efficiency and economy of Pullman operation was recognised by the Court, as well as the desirability in the public interest that a pool of sleeping cars, such as that maintained by Pullman, should be at the disposal of the railways. Yet the judgment went against Pullman solely because this company, in a way that was natural if not inevitable, became the only sleeping car company in the country, and thereby holds a monopoly.

The Derailment near Gretna

Colonel A. C. Trench's report on the derailment at Mossband, near Gretna, L.M.S.R., on May 15, 1944, the essential facts in which are reproduced at page 119, shows that the subsoil below the track was not in a satisfactory state. He finds that an error of judgment was committed in not imposing a speed limit —at least for a short time—after the re-ballasting and packing effected on the down line throughout the day before. It is true, however, that no difficulty had been experienced on the up line, where similar work had been done the week-end before, but Colonel Trench feels that conditions on that line must have been nearer the margin of safety than was realised. The headroom under the bridge was such that the rail level could not be raised and the dip at the locality contributed to make the maintenance work difficult. Some hours elapsed before the passengers killed in the leading coach were discovered, but Colonel Trench is satisfied that there was no delay whatever in effecting the rescue work and that every reasonable endeavour was made to ascertain if persons were trapped. He is also satisfied that no driver or other trainman of a preceding train can be blamed for not reporting the track as being unsatisfactory.

Independent versus Conjugate Valve Gears

The latest example of the policy of the L.N.E.R. in modernising its former standard locomotive types by a carefully considered rebuilding programme (which no doubt will be pursued with much greater thoroughness when wartime limitations can be relaxed) is one of the late Sir Vincent Raven's "S3" class 4-6-0's (class "B16" in the L.N.E.R. notation). Some of these engines already had been rebuilt by Sir Nigel Gresley, who provided them with new castings for the three cylinders, and substituted two sets of Walschaerts gear, with his derived motion for the inner piston valve, for the three sets of Stephenson valve gear originally fitted. In the latest example of this type to be converted, however, Mr. Thompson has abandoned the Gresley valve gear and has fitted an independent set of Walschaerts valve gear for each cylinder. A reversion thus has been made to the provision of three separate sets, with the important difference that the outside valves are arranged above their respective cylinders, and the motion is more accessible. These are important points at the present time, when trained running shed personnel is scarce and maintenance work must absorb a minimum number of man-hours. Probably it is in that direction that a reason for the abandonment of the Gresley gear is to be found, for despite its undoubted ingenuity, it would yield first-rate results only when kept in a first-rate state of repair, and worn pins and bushes (which under wartime maintenance standards must be tolerated) seriously reduced its efficiency. With independent valve gears for each cylinder, this handicap is avoided.

A Pioneer of Road-Rail Co-operation

THE death on July 24, at the age of 70, of Mr. F. C. A. Coventry, which we record with regret this week, may be regarded as marking the end of an important era of rail and road co-operation, a sphere in which he was a pioneer, and to which he devoted 40 years of his half century of railway life. He entered the Swindon Works of the G.W.R. as a pupil in 1893, and was under 30 when the company established its famous bus service between Helston Station and The Lizard (on August 17, 1903) as a first step towards a policy of co-ordinating rail and road services. Mr. Coventry entered into the new venture with enthusiasm, and rode alongside the driver of the bus at the inauguration. He was transferred in 1904 to the Traffic Department, more particularly in connection with road motor services, and made this section peculiarly his own.

He may truly be regarded as a pioneer of mechanical road transport, and his original fleet of Milnes-Daimler vehicles, with low-tension magneto and suction-operated inlet valves, occupied in the sphere of road transport a position comparable with that of the *Rocket* with railway locomotives. Yet, with these British-assembled German vehicles, with their distinctive sloping bonnet and very low inefficient radiator, and complete innocence of ball or roller bearings, Mr. Coventry succeeded in maintaining a timetable regularity on country roads which surpassed that of many London motorbus operators working in infinitely easier conditions. He was one of the Founder Members of the Society of Motor Omnibus Engineers, which held monthly meetings during the period from about 1903 to 1907, at which operators of motor vehicles met to discuss the difficulties, both regarding maintenance and traffic, of the infant industry. This society played no unimportant part in the development of the motorbus as a practical and reliable vehicle for both urban and interurban service. Mr. Coventry's practical recital of the problems he was encountering always made his contributions to the discussions of great interest, and he was ever ready to give others the benefit of his own considerable practical experience.

After the last war, the G.W.R. developed the Road Motor Department into an undertaking which ranked among the largest provincial road transport enterprises, despite its railway ownership, and it was the one railway department of its kind which had the courage to inaugurate lengthy bus services parallel with its own main-line railways, in order to handle local traffic, and to feed the railway. After the main-line railways had been granted extensive road motor powers, the new policy was adopted of transferring passenger road transport activities to associated companies in which the railways secured large shareholdings. By the end of 1931, details had been concluded for the transfer of all G.W.R. bus services to road operators, and the last were handed over on April 10, 1932.

It is indicative of the importance of the G.W.R. road interests that, when the Western National Omnibus Co. Ltd. was formed on January 1, 1929, to take over all passenger road services operated by the G.W.R. and the National Omnibus & Transport Co. Ltd. in an agreed area in the West of England (comprising the districts south and west of Exeter as far as the extremities of Cornwall), the G.W.R. portion was transferred to the new company for no less than £180,000 in shares, and involved the transfer of 115 vehicles. Mr. Coventry retired from the position of Superintendent of Road Transport, G.W.R., at the end of October, 1942, but retained various directorships in railway-associated bus and road transport companies up to the time of his death, as well as serving on the Council of the Public Transport Association, to which he was re-elected a few days before he died.

A Great American Railway

A RECENT mail brought from Washington, D.C., four closely printed sheets of comparative railway statistics for the years 1942 and 1943. The statements have been prepared by the Bureau of Railway Economics, Association of American Railroads, and contain a mass of information about 128 Class I railway systems in the U.S.A. The figures relate to

(i) Freight train performance;
(ii) Passenger train performance, including suburban services;
(iii) Motive power and rolling stock equipment; and
(iv) Fuel and power for locomotive use.

In previous issues we have commented on the operations of the U.S.A. railways in 1943, pointing out that all previous traffic records were easily beaten and quoting a number of collective results. As particulars for individual railways are now available, we propose to give some account of the work done last year by the Pennsylvania System which always has borne a high reputation for sound railway operating and organising power. Its practice inspired several changes in organisation and working methods adopted by one or other of the British railways in the spacious times before the last war. The recent electrification of 675 miles of track between New York, Washington, and Harrisburg shows that the great American railway, far from resting on its laurels, is determined to counter new competitors by a progressive policy. We shall therefore be wise to watch what the Pennsylvania is doing. In the description of its wartime performance below, the figures refer to 1943 and it will be seen readily that most of them express averages.

The Pennsylvania is predominantly a freight carrier, operating 9,931 miles or 4·3 per cent. of the 228,000 miles of railway used by freight trains in the States. Over each mile of line it worked 20,680 net ton-miles every day—more than twice the ton-mileage of 9,285 per mile per day for all the railways. In securing this result, the Pennsylvania operated 9·6 per cent. of the total American ton-miles. Its train load was 1,353 tons as compared with the all-line load of 1,116 tons. Its freight train speed of 13·3 m.p.h., however, was below the all-line speed of 15·4 m.p.h. Both of these speeds show a slight decline from 1942 because of greater density of traffic causing delays to freight trains. The Union Pacific, with a speed of 17·9 m.p.h., put most of the heavy lines in the shade, but, though it has nearly the same length of line as the Pennsylvania, it has only half the density of traffic.

For freight working the Pennsylvania used 2,155 road engines, nearly a tenth of the total number used in the States. The percentage of unserviceable engines was only 8·4 as compared with an all-line percentage of 11·9. On the other hand, each serviceable locomotive ran 114 miles a day, 11 less than the all-line mileage per day and 30 less than the Union Pacific's average distance. The main reason for this slow movement appears to be the large number of freight carrying wagons on the Pennsylvania lines—245,000 or 12 per cent. of the all-line total. The Union Pacific, with less than a third of that number on hand, was able to move each serviceable wagon 73 miles in a day, 23 miles more than the all-line wagon-miles per wagon-day and 33 more than the Pennsylvania figure. By this free movement the Union Pacific obtained 1,465 net ton-miles from each wagon every day as compared with an all-line ton-mileage of 1,040 per wagon-day and the low figure of 838 on the Pennsylvania.

The deduction is irresistible that the pressure of war-traffic has fallen with exceptional severity on the Central Eastern region of the States which is engaged in coal mining, steel manufacture and other heavy industries. A large share of the traffic handled yields big wagon and train loads but even in normal times does not move so rapidly as high-class merchandise. The wartime rush evidently has caused a good deal of congestion on running lines or in yards where no fewer than 1,500 shunting engines are used by the Pennsylvania, 11 per cent. of the total number of shunting engines on all lines.

There is the further point that the working of freight trains must be hampered frequently by the increase in passenger train mileage. The Pennsylvania works passenger trains over 6,150 miles of its system, equivalent to 3·7 per cent. of the total mileage open for passenger services in the States. Last year it ran 11 per cent. of the aggregate passenger train mileage. This meant the working of 24 train miles over each mile of line every day, three times the all-line figure which was only slightly exceeded by the Union Pacific running an infrequent service through the Central Western region to the Pacific coast. For passenger train-miles per train-hour the Pennsylvania beats all the large railways at 42, compared with the all-line statistic of 35. The New York, New Haven & Hartford is a busy passenger line connecting New York with Boston and is fairly comparable with some sections of railway in this country: it reached only 37 train miles per train-hour.

But it is the size of the Pennsylvania which is most impressive. Roughly it is six times as big as the New Haven and in passenger statistics of work done it far surpasses the other American systems. In 1943 it worked one-eighth of the passenger coach miles run in the States and yet it has only one third of the number of locomotives assigned to freight service in use for hauling passenger trains. Altogether Pennsylvania locomotives last year burned 17,216,000 tons of coal, nearly 11 per cent. of the aggregate consumption of the U.S.A. railways. In making this calculation oil, electricity and other fuels have been converted to a coal-tonnage basis, so that we have a comprehensive measure of the traction effort put forth. In 1942 the Pennsylvania managed to get through by burning 15,295,000 tons of coal. The fact that it required 1,921,000 tons more last year proves that a great strain is being placed on its resources under war conditions. The increased "consumpt," to use the Scottish term, of 12½ per cent. would have sufficed to work the Lehigh Valley, a railway of 1,250 miles in the Great Lakes region which handles a heavy traffic. "Prodigious" is the adjective that best applies to the operations of the Pennsylvania System and we have enjoyed the opportunity of sizing up its magnificent performance.

Air Competition with Railways in Argentina

ALTHOUGH most of the population in Argentina is concentrated round Buenos Aires, there are important industrial zones about 1,000-1,2000 km. west and north of the capital which form the termini of main-line railways and it is along these routes that air transport is now operating. In addition to the through passengers between the two termini there is a considerable demand for transport between the country districts and the respective termini, in the case of Buenos Aires this zone extends for some 450 km.; at the other end of the line the country district starts some 200 km. from the terminus, the intervening stretch being sparsely populated. There is, however, usually insufficient traffic to justify more than one train a day in each direction, and it is therefore important that it should be arranged to cover these various demands as fully as possible. During recent years there has been a tendency to reduce the cost of passenger train operation by replacing night by day trains. The loss of purely local traffic to the roads has enabled the stopping services to be provided for by attaching coaches to parcels trains or by railcars so that the through trains need call only at the principal stations *en route*, which are usually also junctions and water stops. Due to the reduction in train weights and elimination of frequent stops, by the time war broke out the long distance trains had been accelerated to cover 1,000 km. in about 15 hr., an improvement of some 25 per cent. on the sleeping-car trains previously operated.

This advantage to the railway and apparent speeding up has been to the detriment of the passenger, as departure being in the early morning and arrival at night, the through passenger has to spend the whole of one working day in the train, while a loss of three complete working days is entailed in a round trip between termini, allowing only one business day at destination; moreover, the early start and late arrival frequently cause the passenger to incur hotel expenses at one, if not at both ends of the journey. These factors, coupled with the tediousness of such a long journey through unvarying scenery, specially during the intense heat of summer, place the railway at a disadvantage with the aeroplane, which can cover the distance in approximately one-third of the time taken by the train. The passenger from the country districts is also prejudiced because arrival at the terminus is late at night and, allowing one day for business at destination, there is no return service until the morning of the second day. Most farmers possess cars, and use this means of conveyance for short trips to the terminus; nevertheless, the fast trains attract a certain amount of country traffic; passengers have shown willingness to motor considerable distances to the nearest stopping place of the express rather than take the slow train at their local station.

Although to the present the loss of through traffic to the air has not been considered sufficient to warrant combative measures—largely due to the reduced scale of air facilities—with the large expansion of air services which may be expected after the war the railways are liable to lose most of their long-distance passenger traffic unless their services are made more commercially attractive. However convenient it might be to abandon passenger traffic entirely, the government will almost certainly insist on the maintenance of services and efforts should therefore be made to secure good patronage for them. The distances in question are not sufficient to make air travel by night attractive either to passenger or to operator, but they are ideal for overnight train services. This fact might be

exploited by the railways by rearranging their service so that the rail journey would occupy less business time than the trip by aeroplane, and would also entail a lower overall cost to the passenger (hotel expenses being considered as part of the cost of travel) than the present trains. By fixing departure at, say, 7 p.m. and arrival at 9 a.m., the round trip between termini could be made with only one working day away from home, and that day would be entirely available for business at destination. Moreover, travelling would be during the cool of the night and hotel expenses at either end of the journey would be avoided. Such a rearrangement would also favour the intermediate traffic as passengers from country districts would be able to make the round trip to the respective terminus in one working day without an excessively early start or late return.

As to the cost of operating an overnight service, the difficulty up to the present has been the poor pay-load obtained in sleeping cars. These contain twelve 2-berth compartments but under the system of " concessions " which has grown up and can hardly be eradicated, many passengers—on the ground of the freight traffic they give the companies—claim sole use of a 2-berth compartment so that the passenger complement of the sleeping cars is little more than half their rated capacity. Sleeping accommodation has not been provided for second class passengers. To obtain a satisfactory pay-load without excessive train weight, allowing the present-day schedules to be operated by steam engines, the following innovations may be considered:—

(1) Double-storey sleeping cars, which in addition to 2-berth compartments would enable single-berth facilities to be provided, on the lines recently introduced in the U.S.A. by the Pullman Company. Such vehicles would be practicable within the limits of the loading-gauge for broad gauge railways.

(2) Provision of sleeping accommodation for second class passengers in economical form, on the lines of cars delivered some years ago to the Chinese National Railways.

(3) Provision of " reclining " cars with individually adjustable chairs for the use of passengers unwilling to pay sleeping supplements and for intermediate passengers. It is understood that these facilities have proved very popular in the U.S.A.

Adequate toilet and restaurant facilities would have to be provided (the latter at each end of the journey only) so that the passenger could step from the train ready to commence his business at destination without delay, and at a moderate cost over and above the basic fare.

The matter should be viewed from the standpoint of net revenue rather than from that of maximum operating economy. If services have to be provided in any case, it is preferable to secure good patronage even at slightly increased operating expense than to run a more economical service which will not attract traffic. It is felt that whatever improvements are made in a day service—by the introduction of diesel haulage, air conditioning, and the like (all calling for heavy expenditure)—the air will still enjoy a commercial advantage over a means of travel which involves the loss of so much business time and so many incidental expenses to the passenger.

Railway Road Fleets in Wartime

WITH fleets of 11,438 motor vehicles, 11,339 trailers, 7,831 horses, and 20,658 horse-drawn vehicles, the British main-line railways justly claim to be the largest operators of road cartage vehicles in the country. The services operated by these vehicles, although considerably reduced in mileage to meet the urgent need for the utmost economy in petrol and tyres, are busier than ever. The latest figures show that the mileage run by railway motors, for example, is now some 16,750,000 a year less than in pre-war days, but the traffic carried has increased by more than 2,350,000 tons. To achieve this drastic reduction in mileage it has been necessary to reduce to a minimum country lorry services throughout road transport, and motor tranship services. Traders in all parts of the country have co-operated willingly with the railways in accepting less frequent deliveries, and in some of the more remote districts deliveries have been curtailed to two or three a week.

These economies have been offset to some extent by changed circumstances in war production. The dispersal of factories, and changes in the location of industry, have turned small towns and villages into industrial areas almost overnight. Where once horses or motors were engaged chiefly in delivering goods to village stores and private houses, greatly augmented cartage fleets had first to carry the materials to build the factories and are now needed to cope with the ever-increasing output of war materials. Other interesting, but none the less important, war work undertaken by the railway road fleets includes the delivery of hundreds of thousands of tons of cement for the construction of new aerodromes; the cartage of 12,000-gal. petrol tanks 30 ft. long and 9 ft. in dia., each weighing 5 tons, to Royal Air Force aerodromes; the delivery of drums of cable along the route of new underground cable lines; and the distribution of air raid shelters. Since the outbreak of war one railway alone has delivered over 750,000 shelters.

The handling of extra traffic has added considerably to the already difficult maintenance problems which are due mainly to the shortage of experienced staff and to the difficulty in obtaining spare parts. To overcome the latter obstacle, various methods are being adopted whereby worn parts which normally would have been scrapped are being reclaimed for further use. Numbers of processes, including metal spraying, arc and gas welding, and electro-chemical depositions, are being used with marked success. Mobile workshops have been constructed to maintain fleets in the event of damage by enemy action, and to deal with repairs to vehicles operating in areas remote from larger workshops. As a further precaution, additional running repair depots have been established in converted railway premises. These resources have been well tried during blitz periods, when altogether 1,007 motors, 1,178 horse-drawn vehicles, and 601 trailers were damaged or destroyed.

Special campaigns, aided in some cases by the appointment of demonstrators and by the issue of films, are being undertaken vigorously to conserve tyres, oil, and petrol. On one railway 71 per cent. of the tyres sent for examination after the maximum mileage had been obtained were found to be fit for remoulding, a figure which compares favourably with the average of all users throughout the country of 39 per cent. It is a tribute to the efficient maintenance of railway road vehicles that, notwithstanding the greatly increased average age of the vehicles, which in many cases has risen by as much as 20 to 25 per cent., their availability for traffic remains practically the same as before the war.

South Australian Government Railways

THE report of the South Australian Railways Commissioner for the year ended June 30, 1943, shows that gross earnings, which exceeded those of the preceding financial year by £868,568, were greater than for any previous year. There was a continued growth in passenger traffic, also a substantial increase in general merchandise business. These increases were due to industrial expansion, restrictions in inter- and petrol rationing, as well as defence activities. There was a decrease from the carriage of minerals. Working expenses rose, compared with 1941-42, by £809,159; of this increase, various wage awards (some of which operated only for a part of the financial year) accounted for £229,605, and the higher cost of coal for £93,844. The increase of £59,409 in net earnings enables the deficit for the year under review, after accounting for interest, depreciation, etc., to be reduced by £62,271 in comparison with the previous year. General results are compared in the following summary:—

	1941–42	1942–43
Miles open	2,557¼	2,547¼
Train-miles	6,598,746	6,792,459
Passenger journeys	28,512,513	30,863,577
Goods, minerals and livestock (tons)	3,127,900	3,459,855
Average haul (miles)	123·36	124·76
Operating ratio (per cent.)	75·6	78·2
	£	£
Capital cost of open lines	29,271,009	29,686,970
Gross earnings	4,963,907	5,832,475
Working expenses, including pensions	3,753,930	4,563,089
Net earnings	1,209,977	1,269,386
Interest, sinking fund, depreciation, etc.	1,344,925	1,342,063
Total deficit	134,948	72,677

The increase in passenger traffic was common both to country and suburban travel. Country passengers numbered 3,197,942 in the year under review, against 2,638,860 in 1941-42, and the corresponding receipts were £1,052,267 and £904,475. The number of suburban passengers rose from 25,873,653 to 27,665,635, and suburban passenger receipts from £405,248 to £452,109. The total first-class receipts of £155,108 showed, however, a decrease of £38,663. Of general merchandise the quantity conveyed was 1,853,672 tons, against 1,758,656 tons in 1941-42, and the receipts therefrom rose from £1,944,634 to £2,374,987. Bookstall and refreshment room services brought in a total of £249,854, against £211,535 in 1941-42. The Government contribution of £120,000 to be applied towards paying 20 per cent. of the prescribed freight charges on the rail carriage of wool, manures, livestock, wheat, flour (ex country mills for metropolitan area), and barley, continued throughout the year, and railway customers received the benefit of such reduction on the ordinary freight rates. The total value of this concession amounted to £163,067 for the year, or £43,067 more than the fixed Government contribution of £120,000.

LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

Diesel Rail Traction in India

The Drewry Car Co. Ltd.,
River Plate House,
10/11, Finsbury Circus,
London, E.C.2. July 25

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—We read with much interest the commentary in your July 21 issue on Mr. H. W. Puttick's paper on diesel rail traction in India, and are rather surprised that no mention is made of his favourable references to the railcars in service on the Nizam State Railways.

In his paper Mr. Puttick refers to the fact that the 5,000 mile examination of the N.S.R. railcars takes one day, the 20,000 and 40,000 mile examinations two days, and the 60,000 mile revision takes six days. Moreover, it is stated that the engines require opening out at 150,000 mileages only.

We think that this is a tribute equally to British manufacture, to the consulting engineers, and to the railway organisation generally; the last-named is in our opinion especially praiseworthy in view of the present labour situation in India and the difficulty in obtaining prompt shipment of spares from England. In the circumstances, therefore, and having regard to India's potentialities as a post-war market for British-built diesel traction equipment, we think that these facts are worthy of record.

Yours faithfully,
G. ARNOTT

The Control of Industry

Essex. July 30

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—I have read the article under this heading contributed to *The Sunday Times* of July 23 by Sir William V. Wood, President, L.M.S.R., and your editorial thereon. Sir William sets out to explain the "regulative technique applied to the railway industry, particularly since the passing of the Railways Act, 1921," and suggests that "it may be capable of adaptation for more general application." In a few terse paragraphs he contrives to deal with standard revenue, returns and statistics, and the functions of the Railway Rates Tribunal in such a way that a layman can understand how things work. When, however, Sir William concludes his article with the sentences which you quote, it is not easy to follow his reasoning. The general impression among City men interested in railways is that the regulative machinery set up by the Railways Act did not operate fully in the ten years before the war because the Rates Tribunal dared not increase charges because of the competition of road carriers, but nobody would gather that either from Sir William's article or from the editorial.

Again, how can the removal of restrictions on charging powers by itself improve the revenue position of the railways? Wouldn't every increase in railway rates drive traffic to road or water conveyance and every cut in rates reduce receipts? Under such conditions the Rates Tribunal would seem to be as incapable of piloting the railways towards their standard revenue as it has proved to be since 1928. To an outside critic, many sections of the Railways Act appear to have worked well, but the system of fixing rates and charges was too artificial to stand up to the rough usage of everyday business. Sir William Wood's peroration will hardly convince commercial people that any similar machinery would be useful for regulating their own industries.

Yours faithfully,
EAST ANGLIAN

Bradshaw's Early Timetables

60a, Green Lane,
Northwood, Middlesex. July 20

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—Enquiries arise from time to time as to the early timetables which were produced by George Bradshaw or later by the firm of Bradshaw & Blacklock; it is therefore possible that a list extending from 1838 to 1867 may be of interest. No copy of the first timetable on the list seems to have survived. It was, however, fully described by its compiler, R. D. Kay, who was the first Editor of *Bradshaw*. Particulars from his statements are given in Mr. Royde Smith's "History of Bradshaw," and also in "The Centenary of Bradshaw," by Mr. Charles E. Lee.

BRADSHAW'S TIMETABLES PUBLISHED 1838-1867

First issued	Title	Notes
1838	Liverpool & Manchester Ry. and a Map of England	A local timetable published at Manchester in the summer of 1838
Oct. 19, 1839	Bradshaw's Railway Time Tables. 6d.	Northern lines
Oct. 25, 1839	Same wording. Some marked (No. 2). 6d.	Midlands and London
Oct. 25, 1839	Same wording on title page. Marked (No. 3). 1s.	Combines above two. Label on cover is worded: "Bradshaw's Railway Companion" 1s.
Jan. 1, 1840 ...	Bradshaw's Railway Companion. Early issue marked (No. 3). 1s.	Issued at intervals, usually monthly. Ceased 1849
April, 1841 ...	Bradshaw's Railway Time Tables Sheet form. 3d.	Issued at first irregularly, but monthly from December, 1841, for many years
Dec. 1, 1841 ...	Bradshaw's Railway Guide. 6d.	Now issued as "Bradshaw's Guide to the British Railways." Price 4s.
Jan. 1, 1845 ...	Bradshaw's Monthly Railway Guide . . . for every railway in Great Britain and Ireland. 3d.	Title changed, but continued into 1901. Abridged from 6d. Guide
June, 1847 ...	Bradshaw's Continental Railway, Steam Navigation & Conveyance Guide. 1s.	Issue suspended at present
Oct., 1848 ...	Bradshaw's London Railway Guide Direct from the Metropolis. 6d.	Title revised. Price reduced to 2d. Ran for a few years
Oct., 1848 ...	Bradshaw's Metropolitan Railway Guide; Sheet Form. 2d.	Timetable to and from the Metropolis. Soon ceased
Oct., 1848 ...	Bradshaw's Local Monthly Time Tables . . . for Liverpool, Manchester and the surrounding Districts . . .	Price not known. Timetable probably merged in Manchester Guide in 1850
1850	The Scotch Railway Guide. 3d. *Became* Bradshaw's Scottish Ry. Guide in 1851. 1d.	Does not appear to have lasted long
1850	Bradshaw's Manchester Railway Guide, Commercial Companion & Advertiser. 1d.	Now Bradshaw's Manchester A.B.C. Railway Guide. 1s.
July, 1858 ...	Bradshaw's Through Route Rly. Guide. To and from all parts of the country. 6d.	Ran for six months only, but formerly (Jan., 1857) part of 3s. 6d. Handbook
July, 1862 ...	Bradshaw's London Railway Guide. To and from provinces. 2d.	In "A.B.C." form. Ran for only nine months.
Dec., 1867 ...	Bradshaw's (Through Route), London Ry. Guide, later The London & Provincial Bradshaw. 4d.	Last issue February, 1887. In "A.B.C." form

Yours faithfully,
REGINALD B. FELLOWS

Publications Received

Apprenticeship for a Skilled Trade. By F. Twyman. With an Appendix: Apprentices and the Law, by Henry Newcombe Knight. Obtainable from the Author at 98, St. Pancras Way, Camden Road, N.W.1. 8½ in. × 5½ in. 70 pp. Stiff paper covers. Price 5s. net.—If British industries are to survive and we are to maintain our home and export markets in the post-war world, it is important that we shall be adequately equipped with craftsmen of the right type, and with specialised knowledge in the various trades. Locomotives and even battleships can be produced in a matter of months, but a gruelling training of many years must first be undergone by the men who build these and kindred things. How is the flow of such men to be kept up? There must be a steady influx of apprentices in our skilled trades; many firms have already visualised the necessity and have inaugurated apprenticeship schemes. The author of this little book outlines his proposals which apply in particular to the optical and scientific instrument industries. Considerations on which the scheme is based cover the origin, motives, laws and customs of apprenticeship, the necessity for independent control, what is done in other countries, arguments put forward for deferring the school-leaving age and objections which may be raised on the part of the boys and the employers. The proposed curriculum and some general labour problems relating to unskilled labour and unemployment are also discussed. The legal aspect is dealt with in the three appendices which outline the early history of guilds and crafts, the modern law relating to apprenticeship and the jurisdiction of the courts, and gives a typical form of indenture of the Chamber of Industry & Commerce, Berlin, together with explanatory notes.

The Scrap Heap

A boy aged 14 was fined £1 at Carlisle recently for throwing an egg which hit the driver's cabin of a Carlisle-Newcastle train.

* * *

The members of the L.M.S.R. Dining Club, of Stonebridge Park Power Station, London Road, Wembley, have expressed their appreciation of the fine work of our Merchant Seamen by a donation of £50 which has been sent to the Merchant Navy Comforts Service.

* * *

THE RAILWAY "ARISTOCRAT"

In all respects the interim dividend announcements of all the railway companies are the same as last year. The Great Western Company is undoubtedly the aristocrat of the group. It is the only one of the four companies which has never defaulted entirely on its ordinary stock.—*From "The Scotsman."*

* * *

PILOT WARNED TRAIN

When a flying-bomb hit by fighters crashed near a railway line in Southern England recently an R.A.F. pilot who had helped to bring it down signalled a warning to the driver of an oncoming goods train, which pulled up within a few yards of the pile of rubble thrown across the track by the explosion of the missile.—*From "The Manchester Guardian."*

* * *

STEEL HELMET K.O.

"Train commanders and railroad officials have advised that troops are suffering severe head injuries because steel helmets stowed on overhead racks on troop trains fall as the train rounds a curve, and hits the troops on the head. It is suggested that all troops on trains place their helmets and liners underneath or between seats."

So states a U.S. Army Transportation Corps announcement from Washington quoted in *Stars and Stripes*.—*From "The Star."*

In a little over four years, a United States signalman named Chester D. Strong has been vigilant enough to detect and report no fewer than 18 defects in freight rolling stock which he has observed on trains passing his box at Lebanon Valley Junction, on the Reading Belt Railroad. These defects have included 48 cases of brake beams dropped, 43 broken wheels, 17 hot boxes, 12 cases of shifted load, 9 damaged bogies, 6 sticking wheels, 6 chipped wheels, 5 broken brake hangers, and various other casualties. As a result of his alertness in stopping the trains concerned, it is considered that several possible derailments may have been avoided.

* * *

WHOSE FAULT?

The Government gets no congratulations for the way it is handling the flying-bomb warning system or the rush to the railways.

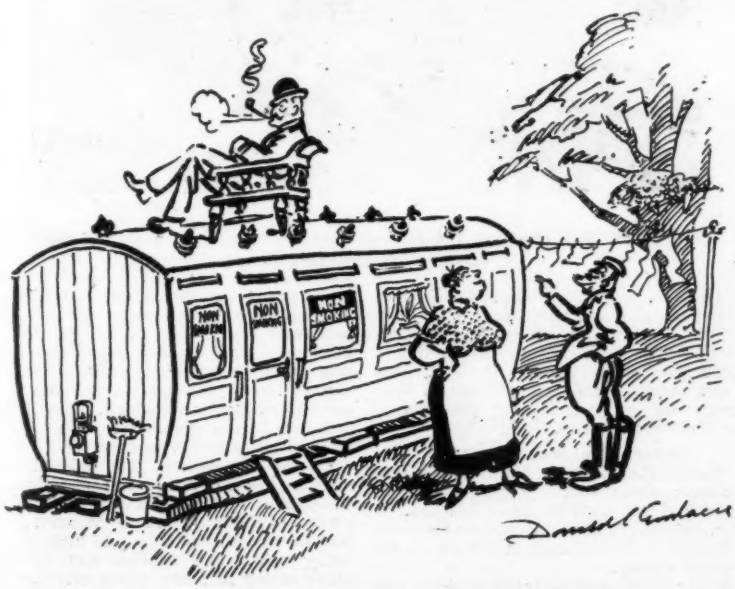
For the first time in its history Paddington Station was closed [on Saturday] for some hours. The crowds were so large that they had to be controlled by mounted police. We hesitate to think what the casualty list might have been had a flying bomb fallen there.

This problem has cropped up every year, and every year the authorities have appeared to be bankrupt of ideas to solve it. Their only expedient has been to announce that no extra facilities will be made available to the travelling public.

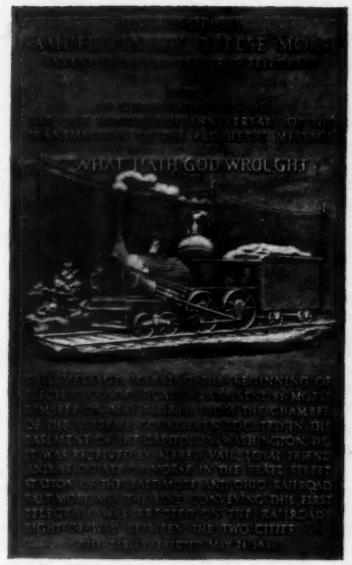
Four classes are travelling today. First, the evacuees. Second, the holiday-makers. Third, Londoners who have been officially invited to take a few nights' rest if they can in the remaining banned areas. Fourth, parents of evacuees visiting their children. There are also the military traffic and the ordinary services.

What are the authorities going to do about it? It is for them to say. They have turned down all kinds of suggestions in the past in favour of their one inevitable device—a threat of poor journeys.

This year the muddle looks like reaching a climax. If it does, we beg those responsible not to blame the "unreasonable" public.—*From "The Daily Mail."*



"He always was a stickler for the regulations!"



The plaque affixed to the Mt. Clare Station of the Baltimore & Ohio Railroad to commemorate the centenary of the first Morse telegraph message on May 24, 1844

* * *

WHAT'S IN A NAME?

"Early and Lait," "Beck and Call," "First and Last," "Begin and Enz," and "Deadman" are some of the more than 100,000 names on the Canadian National Railways' payroll, and for whom more than 2,400,000 pay cheques are issued each year. To complicate matters there are 3,500 Smiths, of which 267 are William Smiths,. 238 John Smiths, and 152 James Smiths. There are 2,000 Browns, many with the same initial, which also applies to the Joneses, Whites and Thompsons.

Other names of Canadian National employeees are Longstaff and Kane, Cote and Button, Big and Little, and, in a group associated with religion, Abbey, Abbott, Angel, Bishop, Brother, Canon, Chapel, Church, Deacon, Dean, Elder, Grace, Kirk, Monk, Noel, Nunn, Parsonage, Pope, Priest, Parrish and Temple. Five of the first six months of the year are represented in the list of names, January, March, April, May and June. There's a Baker who is a cook, a Cook who is a chef, and a Porter who is a porter.

* * *

TAILPIECE

(Unnecessary travelling on Bank Holidays is not encouraged)

I felt that I would like to know
The grass and trees at So-and-So,
But heard a voice within me say,
"A longish run, a night and day.
The country will not run away."

I felt that I would like to spend
A holiday at Moorland's End,
But heard an inner voice that cried,
"Where fate has put you, there abide.
It is too far, that countryside."

I felt that I would like to pass
To somewhere else from where I was,
But something said: "These lures, don't heed them!
The armies fight, the railways feed them.
Just leave the trains to those who need them."

E. C.

OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

INDIA

Passenger Train Raided

During a recent night a passenger train was raided by about 30 dacoits between Viramgam and Samli Road on the Bombay, Baroda & Central India Railway; the passengers were not molested, but postal bags were looted and the guard, the engine driver and the postal sorter suffered rough treatment. The communication cord was pulled, and two or three men who alighted from the train as it stopped overpowered the police, the guard and the other railway staff; dacoits forced the postal sorters to surrender money and insured parcels and then made off across country.

Explosion at Lucknow (Charbagh)

Damage estimated at over Rs. 20,000 was caused as the result of an explosion which occurred recently in a section of Lucknow (Charbagh) Station, and which was succeeded by a fire. Several persons were injured, but there was no loss of life. It is reported that the explosion occurred in a wagon standing in the goods yard, containing barrels of petrol.

UNITED STATES

New Lines

One of the largest of various railway projects in course of execution or about to be begun is a relocation by the Chicago, Rock Island & Pacific Railway of 20¾ miles of main line between Perlee and Eldon, Iowa. The maximum gradient will be reduced from 1 in 62½ to 1 in 167, and the sharpest curvature from 22 to 65 ch. radius; the line concerned carries fast and heavy traffic, and it is expected that the work will have been completed by the end of October, at a cost of $2,475,736.

The Missouri Pacific Railroad is relocating and raising its main-line near Hilliard, Missouri, and also near Woodson, Arkansas, and Coffeyville, Kansas, as a protection against flooding, which has been severe in this region on several occasions in the last decade. At Comiskey, Kansas, a coaling station, of the usual overline type, with cinder conveyor, and accessory equipment, is being built to serve three tracks, one of which is being extended for the purpose.

The Baltimore & Ohio Railroad is to build a line 3 miles long from a point near Cowen, West Virginia, to Donaldson, where it will connect with a line of the Cherry River Boom & Lumber Company. This is to be completed by the end of the year, and is to cost $433,110; it is expected that $124,400 will be saved yearly on the cost of moving coal from the area concerned.

The Northern Pacific Railway has completed plans for the laying of a 6½-mile line from Hazen, North Dakota, to a newly-opened lignite field in that State at an approximate cost of $300,000.

The Chesapeake & Ohio Railway has awarded contracts to a total of $3,237,315 for important engineering work on certain parts of its system. The largest project is for a branch line up Rockhouse Creek with a bridge over the Guyandotte River at Man, West Virginia ($1,101,000); others include a branch from the Homing Creek sub-division at Quinwood, West Virginia ($463,000); replacement of the stone bridge over the Rivanna River at Columbia, Virginia, and relocation and regrading of the line ($358,690); extension of the tracks in the westbound marshalling yard at Hinton, West Virginia ($325,000); extension of the yard tracks at Gladstone, Virginia ($320,200); and the provision of automatic signalling between Kise and Richardson, and at Lockwood, Kentucky, with extension of double track, laying in of passing tracks and spring switches, and other related improvements ($350,150).

Signalling Improvements

During 1944 the Missouri Pacific Railroad is continuing its installation of automatic-block signalling on its Central Division, including 81 miles between Coffeyville, Kansas, and Wagoner, Oklahoma, and 42½ miles between Forest Hill and Kinder, Louisiana. Probably the 150 miles between North Little Rock and Van Buren, Arkansas, will be similarly signalled.

The Terminal Railroad Association of St. Louis is installing automatic block signalling on its west belt line between Easton Avenue and May Street, St. Louis, and is making extensive alterations to its mechanical interlocking plant at its crossing with the Southern Railway System in East St. Louis, U.S.A.

SWITZERLAND

Transit Traffic

After the substantial decrease in transit traffic between Germany and Italy experienced by the Federal and Bern-Lötschberg-Simplon Railways as a result of the change of conditions in Italy in July, 1943, an increase in traffic of this type through Switzerland in both directions has been noticeable since last February. The International Red Cross is responsible for a substantial proportion of the railway transit traffic through Switzerland, which consists, in the main, of full wagon loads of food parcels and other items for prisoners of war of all nationalities.

Federal Railways in 1943

The report for 1943 of the Swiss Federal Railways shows that the profit and loss account closed with a favourable balance of fr. 391,407, which was entirely absorbed in respect of depreciation in arrears on the invested capital.

As far as the general traffic position was concerned, it is stated that the "boom" experienced in previous years showed a substantial decline in 1943; working surpluses were obtained only in the first four months of the year and in July. It is further stated that the reduction in the favourable balance was due, not to a decrease in working receipts, but to the heavy increase in working expenditure mainly caused by the larger staff and higher costs of materials. Compared with 1942, passenger receipts increased by 9½ per cent., and goods receipts decreased by 2·6 per cent. Total working receipts rose by 2·3 per cent., but total working expenditure was greater by 9·4 per cent.

PALESTINE

An Exceptional Load

The Palestine Railways system, situated in the hub of Middle East communications, has seen a variety of exceptional loads since the outbreak of war; but possibly none has been so spectacular as the 28-ton hull of a trawler which recently was conveyed to Haifa Port from an inland site some six miles distant where it had been constructed. The hull was 58 ft. 7 in. long, and had a maximum width of 16 ft. 8 in.; when loaded its highest point was 17 ft. 7 in. above rail level. The minimum structure gauge of the Palestine Railways measures 15 ft. 2 in. in width and 16 ft. 5 in. in height above rail level; and special arrangements had to be made for the dismantling or moving of a number of line-side structures which otherwise the load would have fouled. Fortunately, only one overhead bridge had to be negotiated; and that had a height above rail level of 19 ft. 8 in.

The most suitable vehicle was a standard-gauge 80-ton twin-unit well wagon, the property of Consolidated Refineries Limited, which kindly lent it for the occasion. The hull was "jacked" on to the leading unit (the weight at each end of the wagon was taken by a sleeper cradle), and was secured by chains; wooden uprights at the sides also supported the load. The trailing unit acted as a runner for the projecting bow of the trawler, and served to carry parts of the vessel. The special train carrying the load ran at a speed of 4 m.p.h. throughout. The entrance to the port presented the most anxious moment as the load cleared the gate by one inch only on either side. The trawler was delivered safely at the launching point after a three-hour journey.

The 28-ton hull entering Haifa East Station, hauled by a U.S.A.-built W.D. oil-burning shunting locomotive

Permanent Way Maintenance in India*

By H. C. Muggeridge, A.M.I.Mech.E., F.P.W.I., of Messrs. Rendel, Palmer & Tritton, Consulting Engineers to the Government of India

IN Great Britain there are 51,240 track miles (19,880 route miles) of standard-gauge railway, including sidings, whilst in India there are 51,674 track miles (36,665 route miles), of broad-gauge and metre-gauge line, also including sidings. Although the track mileages in Great Britain and India are thus much about the same, the route mileage of India is nearly double, and a very high proportion (about 90 per cent.) of India's route mileage is single line. The permanent-way man in India has to deal with troubles that seldom, at any rate in such marked degree, come the way of his opposite number in Great Britain; in India, floods and washaways, for example, are much more frequent and extensive, and in the hot weather period deep fissures open in banks of black cotton soil, into which the ballast disappears. At this time of the year, also, wooden sleepers are baked and sometimes shrink so much that spikes become loose enough to be pulled out by the fingers. When the monsoon (the rainy season) comes round, these sleepers will absorb water and swell so that the spikes become fairly tight again and the black cotton soil banks tend to become like pea soup. In some regions in India the monsoon rainfall is occasionally as much as 10 or even 12 inches in 24 hours, which is more than a third of the total that London gets in a whole year. The permanent-way man in India, however, has one considerable advantage, for the low density of traffic gives him greater opportunities for repair work than obtain in Great Britain.

Perhaps one of the biggest differences between the permanent-way man's work in India and Great Britain lies in the hundreds of miles of metal-sleepered track in India. There are steel sleepers and many different kinds of cast-iron sleepers, and each variety calls for its own special technique in maintenance. A typical example of the cast-iron pot sleepers that were formerly so common all over India is shown in Fig. 1. Obviously, close spacing of joint sleepers is impossible.

Another cast-iron sleeper that had a wide vogue and is still used in long stretches of track on one important line is the "D. & O." plate sleeper illustrated in Fig. 2. It will be seen that this type does not lend itself readily to adaptation to take flat-bottom rails.

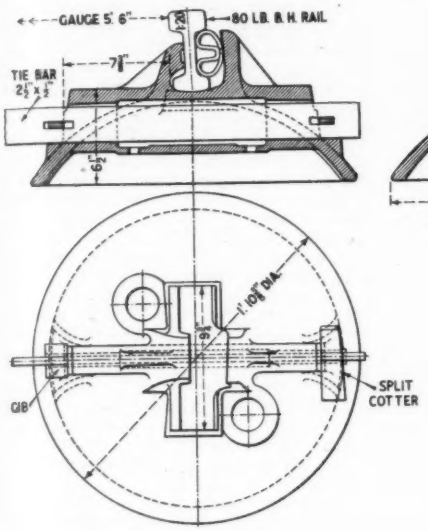


Fig. 1

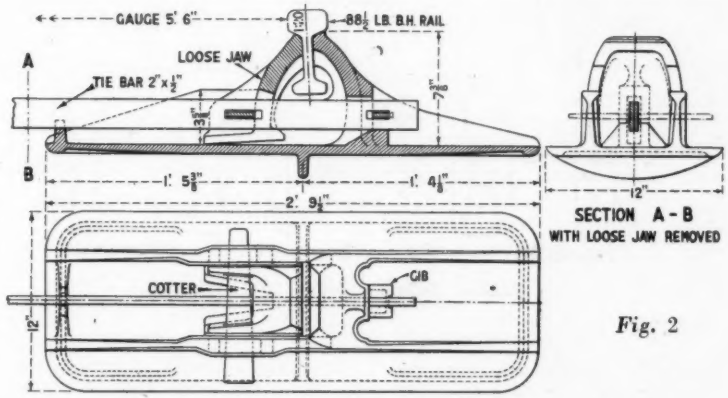


Fig. 2

Since the last war, wooden sleepers have been increasingly difficult to obtain in India, and, as cast iron is plentiful in that country, attempts have been made during the past 15 years to evolve a type of cast-iron sleeper that would be more generally acceptable than the pot and "D. & O." types. One such type is that known as "C.S.T.9" (see Fig. 3), and this is the type that promises to give the largest measure of satisfaction.

A type specially designed to afford direct support to joints is the "Duplex Rail Free" sleeper shown in Fig. 4. This sleeper has not been found to be as satisfactory as was expected, principally because of the hammering on the landing rail-end and the kinking at joints on curves.

Turning now to steel sleepers, the design used in India, generally, has been basically the same for some 40 or more years, and the principal differences between the older and newer types are in the methods of fastening rails to sleepers and in the bottom edges of the sides of sleeper bodies. In the older types the sleeper plates were rolled with sharp, square edges, but in the newer types there are rounded bulbs on the edges.

As regards fastening rails to sleepers, there are two principal patterns; one is the clip-and-bolt pattern and the other the pressed-up lug-and-key pattern. Although it had been used much earlier in a crude form, it was not until about 12 years ago that the "loose jaw" fastening in its present-day form, as shown in Fig. 5, began to be used commonly. These "loose jaws" are made of silico-manganese spring steel, oil hardened and tempered to give a tensile strength of 80/90 tons per sq. in. By adjusting the keys, which are like folding wedges, the gauge can be maintained very accurately, and can be widened on curves to a limited extent, whilst, provided that the ballasting is adequate, creep is held.

With the exception of very small trials of one or two patent patterns, no steel sleepers have been used in India for bull, or double-head, rails. Occasionally a relic of the bad old days may be found in the form of track laid indiscriminately

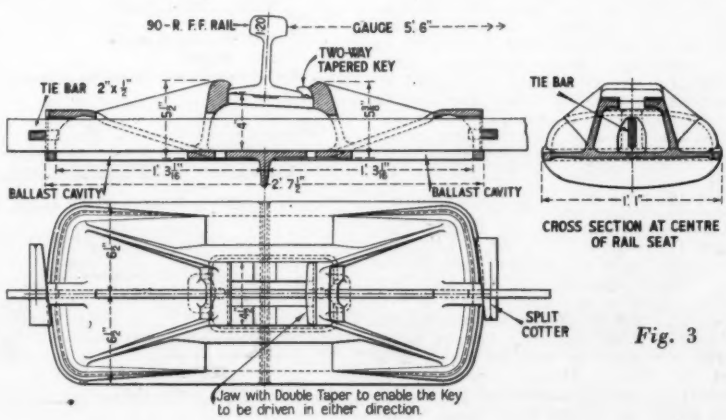


Fig. 3

* Abstract of a Paper prepared in connection with the Diamond Jubilee of the Permanent Way Institution

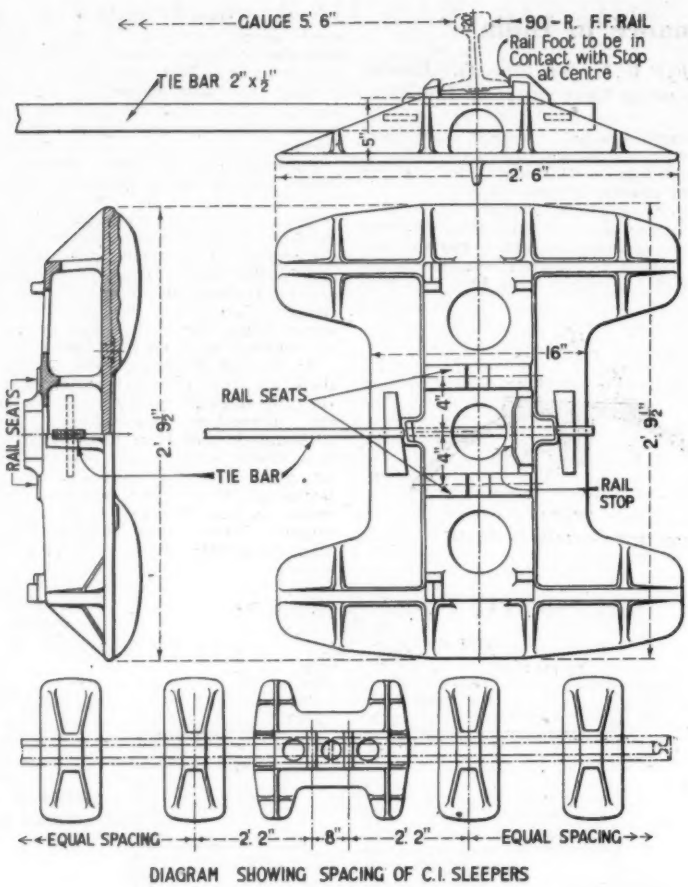


DIAGRAM SHOWING SPACING OF C.I. SLEEPERS

Fig. 4

with both metal and wooden sleepers, but it is impossible to keep a good road with such a mixture.

All permanent-way men probably have one prayer in common, no matter where they may be, and that is to be granted for their main lines good wooden sleepers.

With 10-in. by 5-in. wooden sleepers, practice in India on the 5-ft. 6-in. gauge is 12 in. spacing at joints, thus leaving a gap of 2 in. between joint sleepers which, for packing purposes, are treated as one sleeper. Shovel packing has not yet arrived in India, and beater packing is universal.

Rails, the ends of which are abraded and bent down, are generally referred to in Great Britain as "battered," but in India they are called "hogged" rails, and most permanent-way inspectors in that country have suffered from "hogged" joints. They are not so numerous as formerly when the spacing of joint sleepers was generally wider and ballast less adequate, but they are, unfortunately, still a widespread trouble in India. This is one of the reasons for which India is now obtaining a mobile flash-butt rail-welding plant, a duplicate of that now belonging to the London Passenger Transport Board. The "hogged" ends of old rails will be sawn off and the rails thus shortened will be flash-butt welded together to form lengths of perhaps about 200 ft. The other purpose for which the plant is being bought is, of course, the same as that for which it is used in Great Britain, namely, to eliminate a certain number of joints.

In India the temperature range varies greatly in different regions, in the Punjab it is 100°, and there are innumerable types of sleepers and fastenings, so it will take some years to establish what is a safe length of rail to weld in the different regions and with different sleepers and fastenings. Experiments were begun just before the outbreak of the present war on three of the more important lines, the North Western, Great Indian Peninsula, and East Indian.

The North Western Railway welded groups of three 42-ft. of B.S. 90-R flat bottom, into lengths of 126 ft., and laid about two miles in a main line in the Punjab. The G.I.P. welded various groups of its B.S. 100 bullhead rails into different lengths, mostly 210 ft., and laid them in chaired roads near Bombay, some under electrified traffic and some in the main line where the speed is 65 m.p.h.

The welding was effected by the Gennevilliers thermit process evolved by the French firm Acieries de Gennevilliers of Paris, and sponsored in Great Britain by Murex Limited, which sent an expert French welder out to India with plant specially for the job. When war broke out India was negotiating for a trial of the Boutet thermit process which by then had supplanted the Gennevilliers process in Europe to a considerable extent. The Boutet process was operated by l'Aluminothermique S.A. of Raismes.

In peacetime India rolls all her own rails and fishplates from steel which she produces by the basic open-hearth process. About 1938 Sandberg ovens were installed at the principal rail mills for the control of cooling. India's rail specification for medium manganese legislates for a markedly higher limit of manganese content than the British Standard, 1·40 against 1·20 per cent., but there has not yet been time to determine whether the extra manganese is advantageous or otherwise.

Curve lubrication has not been widely adopted in India; in fact, only experiments have been made. This limited field, so far, has been held by the P. & M. positive-feed grease lubricators and Henry Williams's oil boxes.

For two-hole fishplates there is not the same amount of scope in India as there is in Great Britain, because in the former country the factor governing the close spacing of sleepers at joints is seldom the

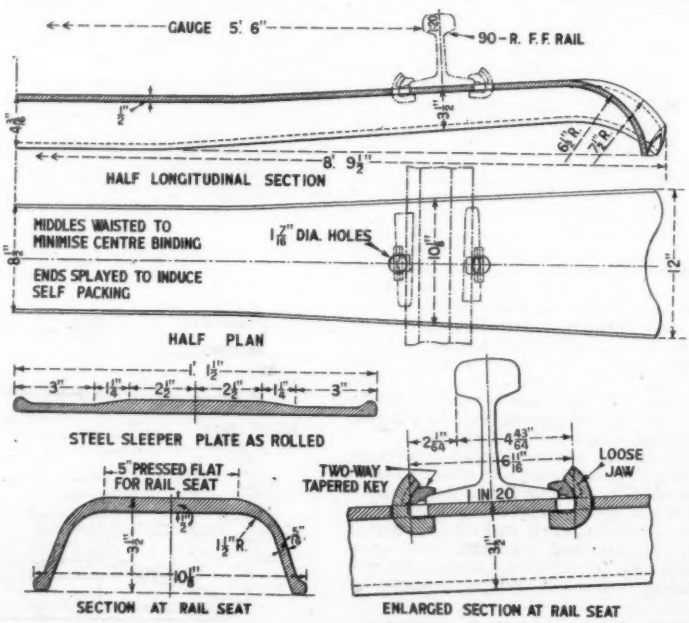


Fig. 5

cast-iron chair jaws standing in the way of fishplates but is usually some type of metal sleeper.

India's crossings often have ramped wing rails,* that is wing rails which, in the vertical plane, are humped with the apex about $\frac{1}{8}$ in. high opposite the nose of the "Vee." As wheels run up the hump they are lifted by this amount above the level of the nose of the "Vee" which thus escapes some punishment.

At present spring crossings are rare in

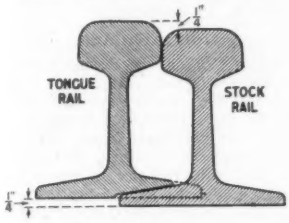


Fig. 6

India, but it seems likely that they may become more common as new layouts are necessary. Diamond crossings flatter than 1 in 10 are not permitted and switch diamonds are never used.

For main-line, flat-bottom track, India has standardised American type switches, as shown diagrammatically in Fig. 6, and has designated them "overriding" switches because the foot of a tongue is machined away to ride over the foot of a stock. This design obviates the weakening of a stock rail consequent upon machining away portions to house a tongue rail, the stock from end to end being just a plain rail instead of a rail with a gash cut in its foot opposite the toe of the tongue rail. All the machining necessary for housing in the case of overriding switches is done on the tongue rail, and the amount by which its heel stands proud of the stock rail is run out in the lead by a gentle gradient carried on a succession of bearing plates of progressively diminishing thicknesses. As may be inferred from the diagram, the slide chairs are two-level.

Reconditioning of worn crossings by welding has been established practice in India for some years, as also has reconditioning of worn and deformed fishplates by reheating and pressing.

Trials of the staggering of rail joints on straight track are in progress, and, so far as they have gone, improved running is not promised; in fact, the Hallade recorder indicates slightly worse running than on square joints.

The present war has greatly accelerated the rate at which the more important railways have been taken over by Government and permanently embraced within the Indian State Railways system which is controlled by a Government Department called the Railway Board. For some 60 to 70 years only three of the large railways were State-owned and worked—the North Western, the Eastern Bengal, and the Oudh & Rohilkhand (now part of the East Indian System—and, although the Government had found the bulk of the capital for the other big lines, they were leased to companies to operate. The boot is now on the other leg, for only one of the big railways is at the present time company managed, and that is the Bengal-Nagpur. Bringing the large railways within the State system began with the Great Indian Peninsula in 1926, and since then standardisation of permanent way materials has been steadily advanced by the Railway Board throughout the length and breadth of India.

Standardisation has, fortunately, not spelt stagnation. There is constant pooling of experience and ideas, and what was impossibly expensive for a single railway to finance is now undertaken by the Railway Board. An example is provided by the Track Research Branch, in which two scientists are employed dealing with such questions as the lateral strength and stiffness of straight and curved track under vertical axle loads up to 22½ tons; working stresses in rails and fishplates; the effects of increasing and decreasing the number of sleepers in rail lengths; flange forces; and so forth. Such information is vitally important to both locomotive and permanent way men, and a senior engineer well known on railways in Great Britain has stated that track research in India was far in advance of anything done in his country up to the time the present war broke out.

* The practice of ramping wings has been discontinued recently, and in its place the topping down of noses has been extended

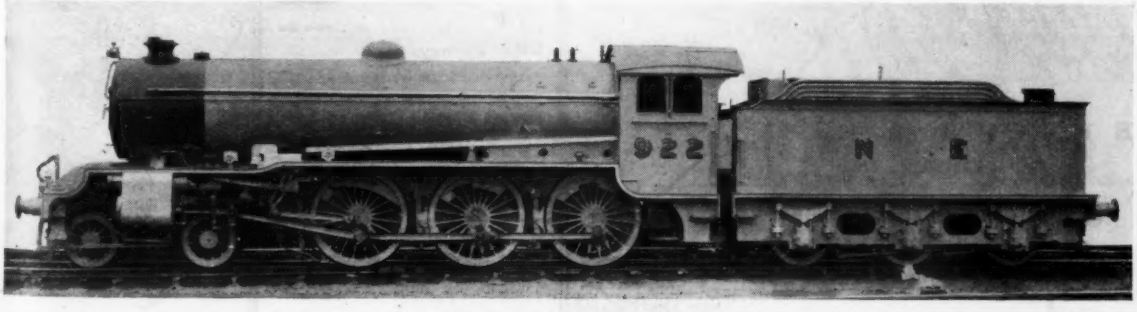
Conversion of L.N.E.R. Class "B16" Locomotives

Independent valve gear for each cylinder is provided in this latest example of L.N.E.R. rebuilding policy

THE late Sir Vincent Raven was responsible for the building of the "S3" class of three-cylinder 4-6-0 mixed-traffic locomotive at Darlington, for the former North Eastern Railway; construction of the first engine began in 1919, and subsequent examples were built until 1924, well past the amalgamation which merged the old North Eastern into the L.N.E.R. In all 70 engines of this class (designated as "B16" by the L.N.E.R.) were built; the aim was to provide an increase in power over the earlier "S2" 4-6-0s which had two cylinders only, driving on to the middle pair of coupled wheels. The "S3s" had three cylinders in a single monoblock casting, and like many other of Sir Vincent Raven's designs, used a direct drive through short connecting rods on to the leading pair of coupled wheels. The mixed-traffic duties for which these engines were intended resembled those for which the Great Northern 2-6-0 "H4" class (now known as the "K3" class under L.N.E.R. classification) were designed.

The three cylinders of these engines are 18½ in. dia. by 26 in. stroke; and as the three piston valves were all between the frames, it resulted in the monoblock casting being weak, so far as the centre cylinder was concerned, with the result that the life of these castings left a good deal to be desired. Consequently, in 1937 engine No. 2364 was rebuilt at Darlington with new cylinders, the outside ones having the piston valves situated above them, instead of between the frames; and two sets of Walschaerts valve gear, with the conjugate 2 to 1 lever motion patented by Sir Nigel Gresley, for actuating the centre valve, were substituted for the original three sets of Stephenson valve gear. Subsequently six more locomotives, Nos. 1372, 1374, 2366, 2367, 846, and 926, were similarly rebuilt, and the class was redesignated "B16/2." In this rebuilding, the cylinders and valve gear were principally concerned, with such alterations to the framing, running platform, etc., as the new arrangements necessitated. The original boiler was retained, with the working pressure unaltered. The new cylinders, moreover, had the same diameter and stroke as the old.

It has been decided now to carry out a further modification by equipping each of the three piston valves with its own independent set of Walschaerts gear; and engine No. 922 has been altered in this way to the designs of Mr. E. Thompson, the Chief Mechanical Engineer. Again, the cylinder dimensions remain unaltered in the new castings, so the tractive effort of the locomotive is not affected. The remaining locomotives will be dealt with similarly, and will be classified "B16/3."



General view of reclassified "B16/3" L.N.E.R. locomotive No. 922 with independent valve gear for each cylinder

The Railways of the Guianas

Eight isolated lines, totalling 230 miles, serve the three South American colonies of European Powers

THE colony of British Guiana, the only British possession on the South American continent, with an area of 89,480 square miles, is about the size of Great Britain. It is bounded on the north by the Atlantic Ocean (with a seaboard of about 270 miles), on the east by Dutch Guiana, on the south by Brazil, and on the west by Venezuela. The population is estimated at 332,898. There are two public railways, both now belonging to the Colonial Government and operated by the Transport & Harbours Department at Georgetown, Demerara. One is the East Coast line, 60½ miles on the 4 ft. 8½ in. gauge, and the other is the West Coast line, 18½ miles on the 3 ft. 6 in. gauge; a total of 79 miles. Both lines were originally built and owned by the Demerara Railway Company (British Guiana was formerly known as Demerara).

The company was incorporated in 1846 and the first section, from Georgetown to Plaisance, was opened in 1848. It is thus the oldest railway in South America. The extension of the East Coast line (then known as the Berbice Railway) from Mahaica to Blairmont, was authorised in 1901. In 1922 the Demerara Railway Company's property was acquired by the British Guiana Government and the management amalgamated with that of the Colonial steamer service, under the title of the Colonial Transport Department, which at a later date assumed control of the harbours and road services and became the Transport & Harbours Department.

The following are the principal statistics of working for the whole of the railway system, for the year 1939:—

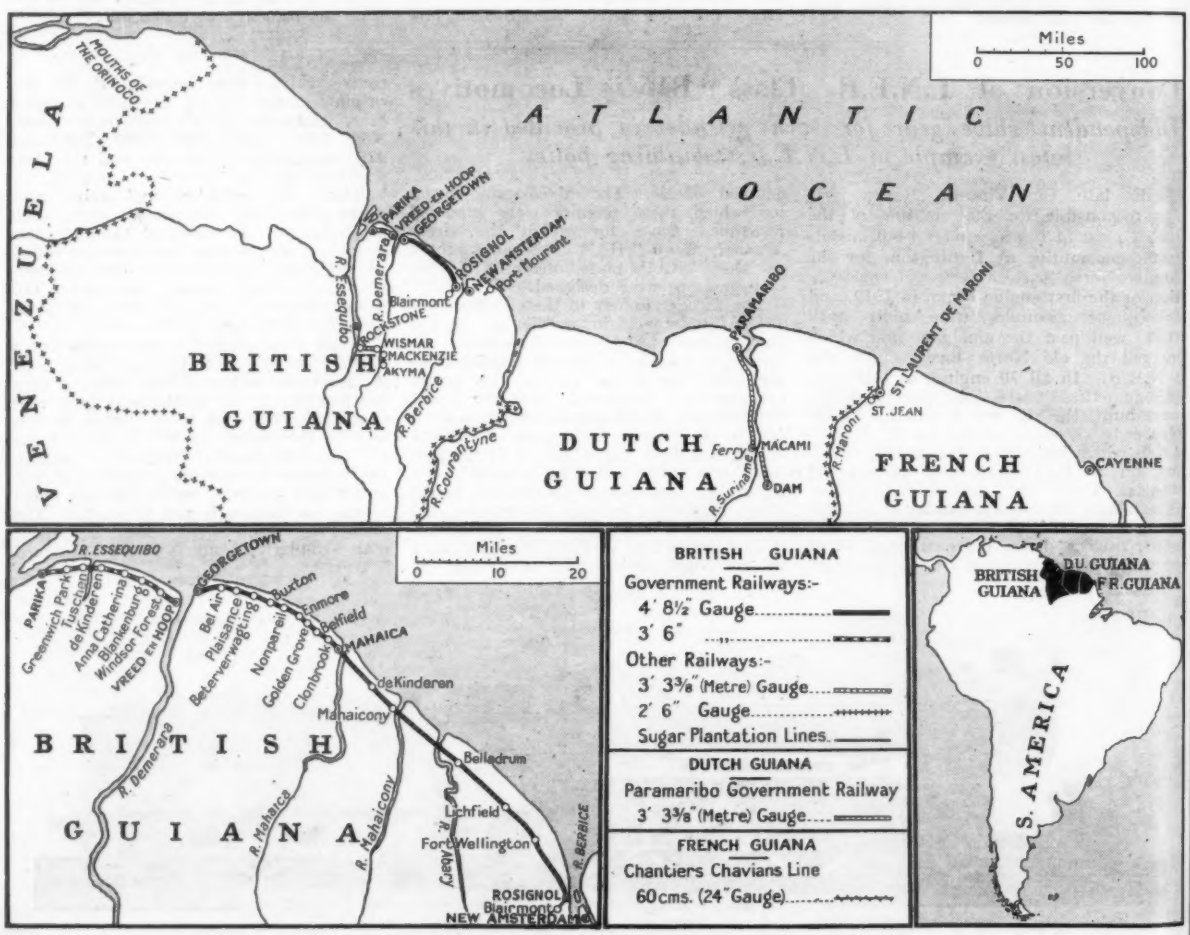
Passengers	1,509,230
Goods (tons)	108,052
Train miles	245,596
Operating ratio, per cent.	98·35
	$(4s. 2d.)
Passenger receipts	165,203
Goods receipts	156,065
Gross receipts	371,364
Working expenses	365,240

The accounts show that the West Coast line then worked at a loss, but that the deficit was more than covered by the surplus receipts on the East Coast line. Other railways in British Guiana are privately-owned industrial lines. The most important of these is the Essequibo Railway, a metre-gauge line from Wismar, a town about 65 miles south of Georgetown on the west bank of the Demerara River, extending 18½ miles to Rockstone on the east bank of the Essequibo River. This line was built by Sproston's Dock & Foundry Company of Georgetown, aided by a loan from the Government, in 1896. It is used as a logging road, and also as a connecting line to the diamond fields. The other three industrial railways are two sugar plantation lines, the Blairmont, 4 miles, and the Port Mourant, 5 miles long; and a line adjacent to the River Demerara from Mackenzie to Akyma. Various proposals exist for a railway from the coast to the diamond fields, but these appear to be in abeyance.

Dutch Guiana

In Dutch Guiana, or Surinam, with an area of 54,300 square miles and a population of 150,896, waterways are the most commonly used means of transport, and nearly all the settlements are independent in this respect of both railways and roads. The only railway in the colony is the metre-gauge Lawa Railway (or Paramaribo Government Railway), 107 miles in length, owned and worked by the Colonial Government. The line runs from Paramaribo, the capital, to Macami, on the Surinam River, where there is a cable-ferry, and from there it continues southward on the right bank of the river to the terminus at Dam. The principal traffic of the railway formerly consisted of supplies and ores in connection with the goldfields through which district it

(*Continued on page* 121)



The railways (both public and private) in the three Guianas

Multi-Operator A.C. Arc-Welding Equipment

Designed by Metropolitan-Vickers Electrical Co. Ltd., for use in large workshops

THE multi-operator a.c. arc-welding sets, manufactured by Metropolitan-Vickers Electrical Co. Ltd., have been designed for use where there is a considerable quantity of welding work, either concentrated into a relatively small area, as in heavy constructional engineering workshops, or spread out over a large area. The use of one transformer to supply a number of operators results in valuable savings in material, initial outlay and running costs. Moreover, as the transformer need not be fully mobile, it is possible to locate power factor correction condensers where they are most useful, that is, connected direct to the H.V. terminals of the transformer, thus reducing the kVA. on the supply cables.

There are four standard sizes of transformer, namely, 54, 90, 122 and 153 kVA. continuous rating, for supplying 3, 6, 9 and 12 operators respectively, with maximum continuous hand-welding currents of 300 A. at 100-V. open circuit the supply voltages varying from 380 to 440 V. at 50 cycles. In general, condensers for power factor correction will be required and these are mounted on a common underbase with the transformer, thus forming a readily transportable unit. If desired, a three-pole switch-fuse can also be mounted on the transformer. The connections from the switch and condensers to the H.V. terminals are totally enclosed in steel conduit.

The usual arrangement for large railway shops incorporates 3-core cables taken round the shop or bays and looped out at the required tapping points. A separate switch-fuse unit has been designed for use at such points which comprises two trifurcating boxes for the incoming and outgoing mains, a three-phase bus-bar chamber and a three-pole switch-fuse leading off to the transformer. Entirely weatherproof, the unit may be arranged either for wall or floor mounting.

The transformer ratio is adjustable for 380-400-420-440/173 V. at no load, by means of links at oil level which are readily accessible on removing the weatherproof cover held by six quick-release clamps. The H.V. windings are delta connected, and the L.V. interstar connection ensures minimum interference between operators and assists in balancing the load on the H.V. cables.

Terminal arrangements consist of a terminal box on the H.V. side, housing three stem-type terminals to which the supply cable lugs are bolted. Entry to this box is made by conduit if a switch-fuse is mounted on the transformer, otherwise by a grip gland or a wood bush suitable for either single-core or multi-core cables. On the L.V. side, provision is made for accommodating the maximum standard number of four-core cables on stem-type terminals. These are also housed in a steel box integral with which is an adjustable wood clamp for firmly supporting the cables.

From the L.V. terminals, four-core cables are taken to three-or six-way 300 A., welder's distribution boxes, mounted on which are three or six standard 300 A. plug and socket outlets. Multi-core cables enter these boxes through adjustable wooden clamps and are then connected to the stems of the appropriate outlets. Phase markings are given inside and outside the boxes to enable two 300 A. circuits to be safely paralleled for supplying 600 A. current when necessary.

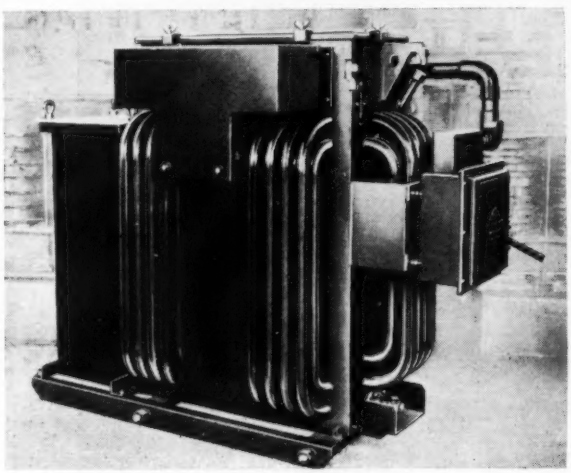
For controlling the welding current, each operator has an oil-immersed, tapped reactor in series with the welding lead. The tappings are taken to two switches mounted on the cover, one of which incorporates an "off" position for isolating the electrode holder when desired. The reactors are made in two standard sizes suitable for maximum continuous hand welding currents of 300 and 600 A. respectively.

The 300 A. unit, which is mounted in a strong cylindrical tank, enables the welding current to be varied between 45 and 300 A. in 35 steps when using a total cable run of 200 ft. and assuming the arc voltage to be 40 V. If shorter cable lengths are used, the currents will rise above those given on the indicator plate to an extent depending upon the precise circuit conditions. To afford a reasonably accurate knowledge of the currents thus obtained, a second scale is provided and the current indicator plate calibrated for a total cable run of 50 ft. This covers the range 45-300 A. in 32 steps, the remaining three being above 300 A. and not calibrated.

The 600 A. reactor is housed in a plain square tank and is also fitted with two current scales. With 200 ft. of cable between transformer and arc, current variation from 90-600 A. is obtained in 29 steps, while with 50 ft. of cable, the 90-600 A. range is covered in 27 steps; the remaining positions are uncalibrated.

Two standard paralleling devices are available. These are the "paralleling box" used for feeding a 600 A. electrode through two 300 A. reactors and the "paralleling adaptor" used for feeding a 600 A. reactor from two 300 A. socket outlets, of any one phase, on the welder's distribution box. The former consists of an all-steel housing, two incoming 300 A. sockets connected internally to one outgoing 600 A. plug, and is supplied complete for attachment to the external connections. The latter consists of two 300 A. shrouded plugs connected by short lengths (about 18 in. long) of flexible cable to one 600 A. shrouded socket. The plugs are yoked together in such a way that it is not possible to insert them except into a pair of outlet sockets on one phase of a six-way 300 A., welder's distribution box.

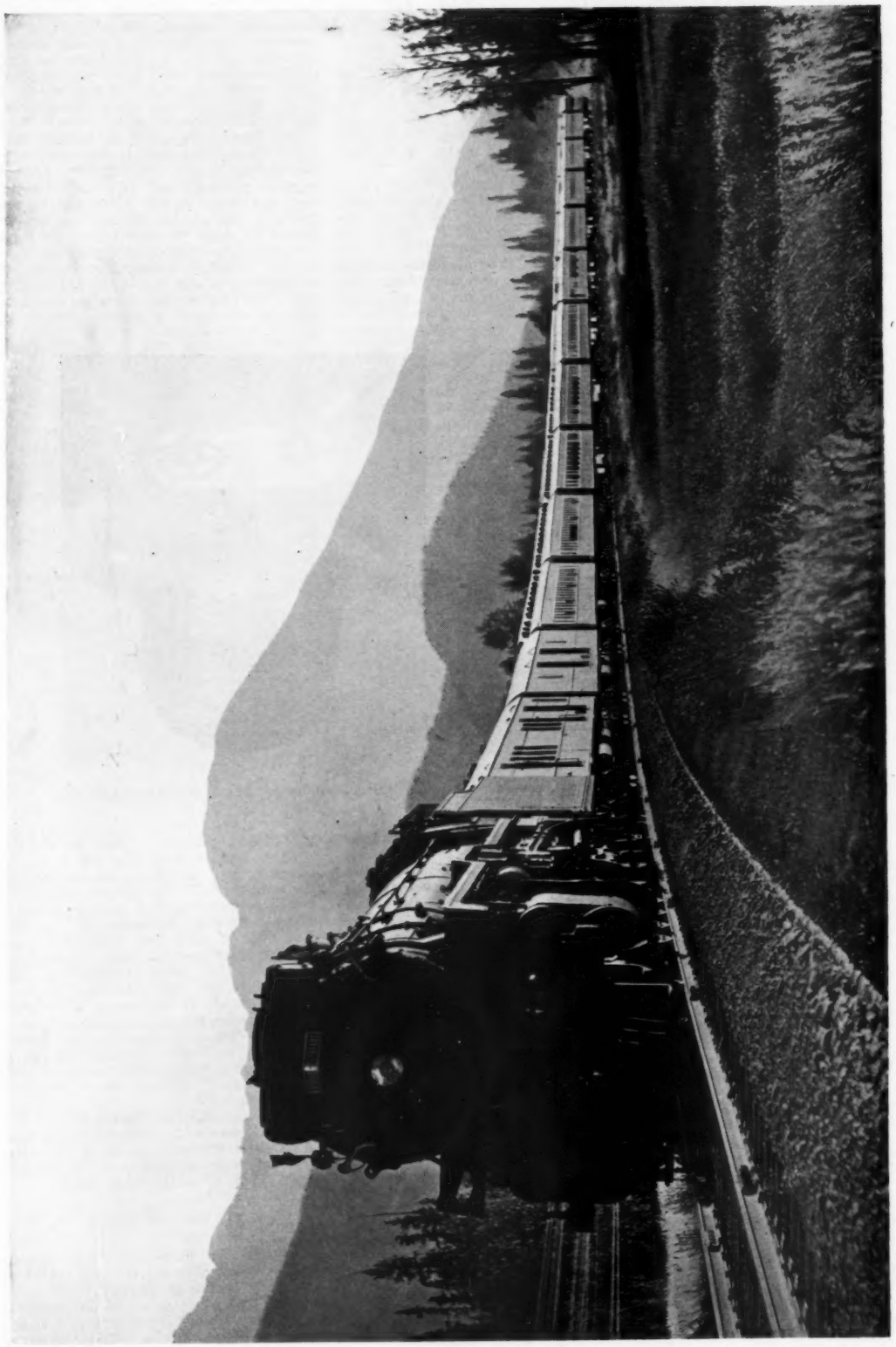
Two further items included in this range of standard equipment are the 300 A. and 600 A. cable-coupling units used for joining together, in series, lengths of L.V. distribution cable.



A Metrovick 6-operator a.c. arc-welding transformer

A 300-A. reactor for use with the transformer

SIGNAL & TELEGRAPH TECHNICAL SOCIETY.—The *Journal* of the Signal & Telegraph Technical Society, to which reference was made in an editorial article in our July 28 issue, is not printed. It has been produced entirely with voluntary labour and duplicating methods, using materials already to hand, in view of the present emergency. Copies are not available, excepting to members.



THE FIRST SECTION OF THE EASTBOUND DOMINION EXPRESS CANADIAN PACIFIC RAILWAY, APPROACHING BANFF, ALBERTA

Banff is 40 miles east of the summit level of 5,335 ft. by which the C.P.R. crosses the Great Divide in the Rockies. The locomotive is 2-10-4 No. 5908

RAILWAY NEWS SECTION

PERSONAL

Sir Frederick C. Stewart, who recently became a Director of the company, has been appointed Deputy-Chairman of the North British Locomotive Co. Ltd. Sir Frederick Stewart is Chairman of Thermotank Limited, Thermotank Engineering Co. Ltd. and Kelvin Bottomley & Baird Limited, and a Director of Brown Bros. & Co. Ltd. and other companies.

The late Sir Follett Holt, who was Chairman of the Entre Rios Railways Co. Ltd. and Argentine North Eastern Railway Co. Ltd., and formerly Chairman of the Buenos Ayres Great Southern Railway Co. Ltd. and Buenos Ayres Western Railway Limited, left £181,137.

Mr. F. P. Sealey, Manager, Great Western Railway Royal Hotel, is retiring on September 30 next, after 21 years in that position and 41 years with the Catering Department, G.W.R. For many years he has been responsible also for Paddington Station refreshment rooms.

We regret to record the death, at Norwich on July 4, of Mr. Ernest Arthur Watkins, who was for some 50 years Secretary of the Mumbles Railway & Pier Company, and the Swansea & Mumbles Railways Limited. He retired in July, 1943.

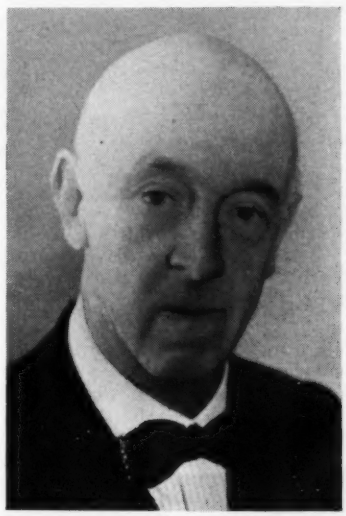
We regret to record the death on July 29, as the result of an accident while mountain-climbing in Cumberland, of Mr. Roland E. Sargent, aged 34, Assistant District Superintendent, Hull, L.N.E.R., since March last. He was a graduate of Trinity College, Cambridge, and joined the L.N.E.R. as a traffic apprentice in 1933.

The late Alderman R. J. R. Loxdale, who was a member of the Shareholders' Audit Committee, Great Western Railway Company, left £211,374.

INSTITUTE OF TRANSPORT COUNCIL

The President has declared the undernamed to be elected as Ordinary Members of Council of the Institute of Transport, to fill the vacancies for representatives of railway, road and water transport which will arise at October 1 next:—Members: Messrs. C. Barrington (Joint Managing Director, Transport Services Limited); C. T. Brunner (Departmental Manager, Shell-Mex & B.P. Limited); Sir John Fisher (Governing Director, James Fisher & Sons Ltd.; now serving as Director, Coasting & Short Sea Division, Ministry of War Transport); Messrs. K. W. C. Grand (Assistant General Manager, Great Western Railway); J. Ness (Assistant Divisional General Manager, North Eastern Area, L.N.E.R.); W. G. Pape (Indoor Assistant to General Manager, and Wartime Economy & Salvage Liaison Officer, Southern Railway); F. A. Pope (Chief Commercial Manager, L.M.S.R.; recently appointed Director of the Port of Calcutta); F. W. Tipton (Managing Director, Thames Steam Tug & Lighterage Co. Ltd.); and J. S. Wills (Chairman, Ribble Motor Services Limited, and other road passenger transport undertakings; Managing Director, Western Welsh Omnibus Co. Ltd.); and one Associate Member: Mr. G. Dickinson (Assistant to Chief Executive Officer, McNamara & Co. Ltd.).

We regret to record the death on July 24, at the age of 70, of Mr. Fulwar Cecil Ashton Coventry, O.B.E., M.I.A.E., M.Inst.T., who retired on October 31, 1942, from the position of Superintendent of Road Transport, Great Western Railway, but retained the various directorships which he held in railway-associated bus and road transport companies. Mr. Coventry was born in 1874 and entered the Swindon Works of the G.W.R. as a pupil in 1893. After some time spent in the drawing office, he became an Inspector of Materials, and subsequently was appointed Assistant to



The late Mr. F. C. A. Coventry
Superintendent of Road Transport, G.W.R., 1922-42

the Carriage Works Manager. When the G.W.R. decided to establish a Motor Department to include both goods vehicles and passenger buses, he was associated with the venture from its inception. He was responsible for the establishment of the first bus service of the G.W.R., which was inaugurated on August 17, 1903, between Helston and the Lizard. In 1904 he was transferred to the Traffic Department, more particularly in connection with road motor services, and in the course of years he made this section peculiarly his own. He was a Founder Member of the Society of Motor Omnibus Engineers, which, during its comparatively short career from about 1903 to 1907, played no unimportant part in the development, as a practical and reliable vehicle, of the bus, for both urban and interurban services. Mr. Coventry was a member of the committee which founded the Commercial Motor Users' Association in 1903 to watch and protect the interests of users of commercial motor vehicles; in addition, he was a Member of Council of the Institution of Automobile Engineers in its early years, and assisted in the re-construction of the Institution when it moved its headquarters from Birmingham to London. In 1912 he was transferred to Paddington as an Assistant to the Superintendent of the Line; and in 1915 his services were loaned to the Ministry of Munitions; he worked in the Munitions Inland Transport Department as Deputy to Mr. W. Howard-Williams (now Chairman of the Central Argentine Railway Limited), and eventually succeeded him when Mr. Howard-Williams was transferred to the Coal Controller's Department. For his war services he was made O.B.E. On returning to G.W.R. service, Mr. Coventry was appointed Assistant Superintendent of the Line in May, 1919, and held that position until he became Superintendent of Road Transport, with headquarters at Paddington, in January, 1922, an appointment which was of particular significance in view of the extensive road motor facilities then being developed by the G.W.R. More recently, since the granting of general road powers to the British main-line railway companies, many of these road transport activities have been transferred to associated companies in which the G.W.R. holds substantial financial shareholdings; and Mr. Coventry represented the G.W.R. on the boards of many of these undertakings. His directorships included Crosville Motor Services Limited, Western Welsh Omnibus Co. Ltd., Bristol Tramways & Carriage Co. Ltd., City of Oxford Motor Services Limited, and Sutton & Co. Ltd. He had been a member of the Standing Joint Committee in connection with the Thames Valley Traction Co. Ltd.; and he was a member of the Bristol Transport Joint Committee, of the Plymouth Transport Joint Committee, and of the council of the Public Transport Association. Mr. Coventry represented the General Manager of the G.W.R. on the Road Transport (Defence) Advisory Committee, and on the outbreak of the present war he was appointed by the Railway Executive Committee to be Chairman of the road committee set up to deal with all matters affecting road transport. Mr. Coventry had been a member since its inception of the Road & Rail Central Conference. He had been a Member of the Institute of Transport since 1931, and had served as a Member of Council.

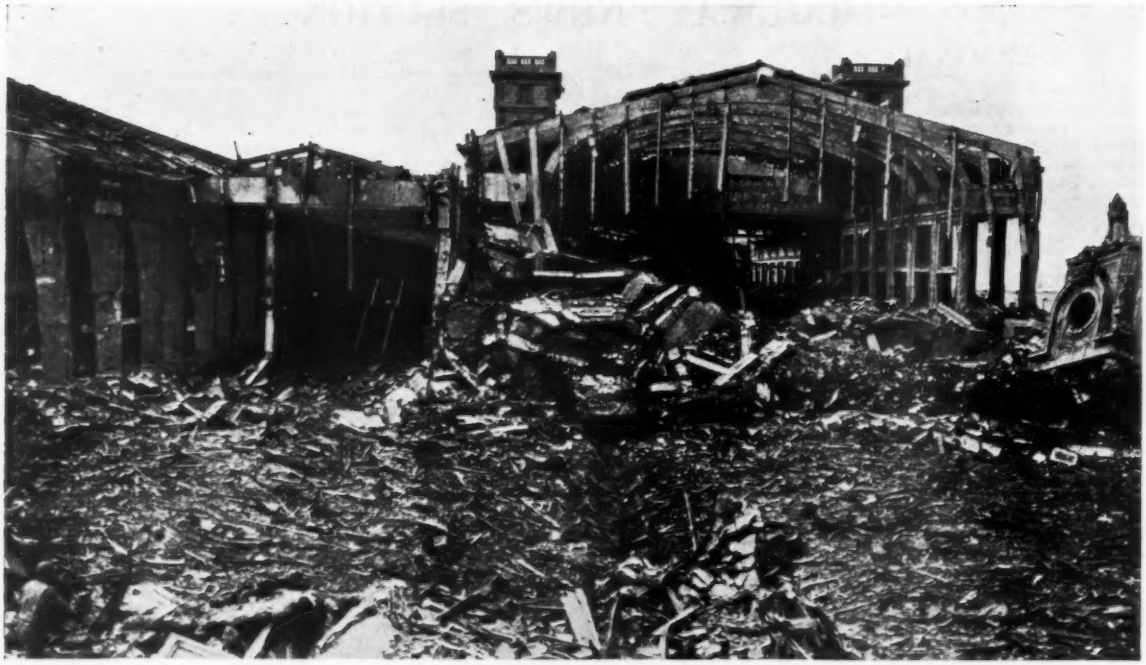
(*See editorial article, page* 103)

We regret to record the death on July 24 of Mr. A. Dimmack, Chief Engineer, Western Welsh Omnibus Co. Ltd.

Mr. W. F. Minnis, General Manager, Belfast & County Down Railway, retired on July 31.

Mr. H. S. Knott, Deputy Traffic Manager, Great Northern Railway (Ireland), has been appointed Traffic Manager, as from August 1, in succession to Mr. J. Lockhart, who has retired on account of ill-health. Mr. Knott has been appointed also Traffic Manager of the Belfast & County Down Railway from the same date (see paragraph below).

Consequent on the new traffic working arrangements agreed between the boards of the Great Northern Railway Company (Ireland) and Belfast & County Down Railway Company, with effect from August 1 (see also editorial note, page 102), the executive work of the Belfast & County Down Railway will be carried out, as from that date, by a committee of management consisting of the following officers of that company: Messrs. H. S. Knott, Traffic Manager; T. B. Andison, Secretary & Accountant; W. A. Hill, Civil Engineer; and J. L. Crosthwait, Locomotive Engineer. Mr. G. B. Howden, General Manager of the Great Northern Railway, will act in an advisory and consulting capacity to the committee of management and the board of the Belfast & County Down Railway.



The Maritime Station at Cherbourg after its capture by U.S.A. Forces. This station was formally opened on July 30, 1933, by M. Albert Lebrun, then President of the French Republic. From a comparison with the illustrations published on page 184 of our issue of August 4, 1933, it is seen that the distinctive tower has been demolished; the stonework on the right of this picture was the top portion, which held the clock

A portion of the Diamond Jubilee Exhibition of the Permanent Way Institution which was opened in the General Meeting Room at Euston Station, L.M.S.R., on July 14. The formal opening by Mr. V. A. M. Robertson, President of the Permanent Way Institution, and Chief Civil Engineer of the Southern Railway, was presided over by Mr. W. K. Wallace, Chief Civil Engineer, L.M.S.R.

TRANSPORT SERVICES AND THE WAR—253

Firth of Forth Ban Lifted

The War Office has announced that the ban on entry into the three Protected Areas on the Firth of Forth was lifted on July 29. However, they remain Regulated Areas, and the bye-laws for Regulated Areas made by the Secretary of State for War on March 31 continue in force.

Canadians Train as Engine Drivers

At the request of the Canadian military authorities, detachments of Canadian railwaymen have been drafted to British railway locomotive depots for the past few months to be trained as engine drivers, with the object of manning supply trains to service our advancing armies into Central Europe. A recent unit to complete its training was a detachment of 29 which left Sheffield L.N.E.R. locomotive depot on July 1 after undergoing a three-month driving course. Some of the men were drivers in Canada, but the majority were firemen. The Canadian authorities and the Locomotive Shed Master of the Sheffield depot conferred in arranging examination papers for the tests, and the three different categories of technical training in which the men passed out were :—

(A)—Full knowledge of all working parts and the location of faults and failures likely to occur in running. An "A" driver is suitable for main-line work and is fully efficient in all classes of locomotive driving.

(B)—A less severe test, but sufficient to carry the examinee through all classes of secondary driving he may encounter, namely, goods and pilot working and shunting.

(C)—A man equal to the British spare driver, who is a first-class fireman and can also take up driving duties in an emergency.

Examination results were highly satisfactory, and well over 50 per cent. passed in class "A." The Canadians say that the L.N.E.R. drivers with whom they have been working on the footplate have been most helpful in their training, and friendships have been made which have every indication of continuing after the war and the return of the men to Canada.

Railway Steamers in War

Since the outbreak of war 92 British railway steamers have been chartered to the Government at varying periods as hospital carriers, transports, assault ships, minelayers and sweepers, ammunition carriers, ack-ack ships, and rescue ships with Atlantic convoys; and 23 have been lost by enemy action. Certain of the vessels fly the White Ensign and run directly under the control of the British Navy, while others are still manned by their peacetime crews, many of whom, both officers and ratings, have received awards for gallantry at sea. Vessels of all four companies played their part at Dunkirk, in which operation 8 were lost. An L.M.S.R. steamer was the last merchant ship to leave Dunkirk. A famous G.W.R. steamer, the *St. Patrick*, was sunk by enemy air attack on June 13, 1941, while on her ordinary passage from Ireland to England. The master, 17 of the crew, and 12 passengers lost their lives. The first American troops from Ireland to this country were brought on an S.R. steamer. Another G.W.R. steamer, the *St. David*, employed as a hospital carrier, was bombed and sunk off Anzio Beach; the master and 12 of the crew lost their lives, apart from many military casualties.

The ss. *Autocarrier*, of the Southern Railway, is now a Navy recreation ship, providing comforts, entertainments, and recreation facilities to the various vessels of the Royal Navy. The three train ferry vessels of the S.R., which enabled through sleeping cars to be run between London and Paris, are at present doing useful and interesting work elsewhere. The G.W.R. cross-channel steamer *St Helier*, the L.M.S.R. Clyde steamer *Caledonia*, and the Isle of Wight Southern steamer *Southsea*, each has an enemy aircraft to its credit, while the L.M.S.R. Clyde boat *Queen Empress* has shot down two. No fewer than 9 L.M.S.R. Clyde steamers were fitted out as minesweepers and have done good work round the coast of Britain. Five of them rendered notable service in a similar capacity in the last war.

Several L.N.E.R. steamers performed signal services in bringing evacuees from Holland at the time of the German invasion. One well-known Harwich steamer, the *St. Denis*, had to be scuttled and abandoned in Rotterdam. The crew, after great hardship, made their way to the Hook of Holland and returned to England in a British destroyer. The L.N.E.R. cargo steamer *Sheringham* worked for a time in the Channel Islands services, while other L.N.E.R. vessels, the goods train ferries normally on the Harwich-Zeebrugge route, assisted in the Channel Islands evacuation. One of these vessels was lost in evacuating British troops from St. Valery. On the same occasion, two G.W.R. cargo vessels were badly damaged, and narrowly escaped destruction; several of the crews were killed and others wounded.

The peacetime strength of the British railways fleet is 130.

Turkish-Made Rails

According to a report from Ankara, the British-built Karabük Iron & Steel Works (to the north-west of Ankara) made its first delivery of rails to the Turkish State Railways early in June. The consignment weighed about 1,000 metric tons.

Higher Railway Rates and Fares in Greece

Because of heavy additional financial burdens, principally increases in wages, goods rates were increased on the various Greek railway systems from May 23 last. The increase amounts to 400 per cent. on the Hellenic State Railways; and 200 per cent. on the Piræus, Athens & Peloponnesus Railway, on the Thessalian Railways, and on the North-Western Railway. Only half the increases are applied to the transport of liquid and solid fuels. In view of the high price level in Greece, these increases though substantial, are not likely to affect the prices of goods. Since the beginning of the war the various increases in railway goods rates have been so moderate as to be overshadowed completely by the increases in prices due to shortage of commodities or to black market activities.

Passenger fares and luggage rates were increased by 50 per cent. on all railways from the same date (May 23).

Motor Traffic in Northern Italy

In order to be allowed to operate their motor vehicles, provided they are able to secure sufficient fuel, owners in the territory of the present Italian Republic have to secure the following documents: (*a*) a permit issued by the German military command at Milan; (*b*) a form called "documento Z" protecting the vehicle to which it refers from being requisitioned; and (*c*) the driving licence issued by the Italian authorities. The "documento Z" must, however, be countersigned by the German military command; otherwise, being issued only by the Italian authorities, it is considered by the Germans as void. Owners in possession of these documents, are allowed to operate their motor vehicles on weekdays only. Only motorcars of doctors and fire brigade and Red Cross vehicles, are entitled to be used on Sundays and holidays, and then only for urgent service.

Belgian Coast Local Railways

A recent report from Brussels stated that the passenger traffic on the light railways worked by the Société pour l'Exploitation des Lignes Vicinales d'Ostende et des Plages Belges in 1943 was considerably in excess of that in the previous year. Independent sources state that virtually the whole of the passenger and goods traffic on the company's lines, which link the bathing resorts along the Belgian coast, was provided by the German Forces of Occupation.

Transport of U.S.A. Petroleum Products

The U.S.A. Office of Defense Transportation announced on June 21 that growing wartime demands for various petroleum products, and particularly urgent need for more equipment to transport liquefied petroleum gases by rail, will be met by adding 1,000 cars to the nation's fleet of 3,282 pressure type tank cars now available. The total cost of the programme will exceed £875,000. The programme calls for construction by the War Department of 400 new high-pressure type cars. The additional 600 cars will be provided by converting standard tank cars of 10,000 gal. capacity to low-pressure type equipment. Because of the urgent need for this equipment, which has grown with invasion of Europe, deliveries are scheduled to begin not later than October, 1944, and the entire programme is to be completed by December of this year.

U.S.A. Presidential Election Travel

The national political conventions held in Chicago for selecting candidates for the Presidency and Vice-Presidency of the U.S.A., raised some acute problems in the matter of transporting the delegates. In normal years these quadrennial conventions attract throngs of visitors and sightseers from all parts of the country, but this year it was regarded by the Office of Defense Transportation as essential that attendance should be confined to those with official convention responsibilities. The regular Pullman sleepers operating into and out of Chicago are 100 per cent. occupied, and 90 per cent. of the occupancy is by Service personnel and civilians travelling on essential business. The Director of the Division of Traffic Movement, O.D.T., indicated to the chairmen of the two major political parties that additional sleeping car service, by ordinary or special trains, would be authorised in the following conditions only. The national committees were to forward to the O.D.T. a list of their accredited delegates (about 1,100), and alternates (usually about 1,000), and of authorised representatives of newspapers, news reels, and radio stations. From these lists the O.D.T. would issue certificates to the individuals so qualified, which would serve as permits to the railways and the Pullman Company to carry them in special cars or trains authorised to run solely for the use of convention personnel. Families of delegates would not be permitted to travel in the special convention cars or trains. If the delegates' journeys to and from Chicago could be made in 6½ hr. or less, they were to travel by day trains, and in coach accommodation, to reduce to a minimum the demand for sleeping car space.

The French Railway Situation

Effects of sabotage—A symposium of reports from various sources

The widespread and extensive dislocation of the French railway system is an undoubted fact of considerable importance to the war situation on the Western Front, but it is one which is difficult to evaluate, partly by reason of the paucity of precise information, and also because of conflicting reports. There is a natural tendency for the French Resistance Movement to hope that its acts of destruction will cause lengthy delays, whereas the German repair squads have demonstrated repeatedly how rapidly traffic can be restored. Damage caused by sabotage or air raids is not normally admitted by either the German Occupying Forces or the Vichy Government, but the latter is sometimes compelled to say something so as to lay the blame on the Allies for the dislocation of food supplies and other civilian necessities.

By the beginning of 1944 the difficulties of the French National Railways (S.N.C.F.) were such, according to the *Revue de l'Economie Contemporaine* for March last, that transport had become the key question in the whole economic situation. Even priority traffic could not always be carried, and non-priority traffic was almost non-existent. A limit had been reached in the use of the available labour and rolling stock, and "the increase in military traffic and destruction by sabotage and air raids reduced still further the possibilities of normal traffic." M. Bichelonne, the Vichy Minister of Production & Communications, reported to a Cabinet meeting on April 13 that the transport situation necessitated the maintenance of the restrictions then recently imposed on coal and electricity consumption. He had already, in December last, spoken of the sabotage which disturbed traffic and caused real damage to the economic life of the country; this was reported in the *Petit Parisien* of December 2.

The *communiqués* of the French Resistance Movement during the past year have shown how attacks have been concentrated on railways and other means of communication, and on German traffic. The French delegation in London stated on May 25 that during the month of February alone the saboteurs caused 120 derailments, destroyed or damaged 200 locomotives and 1,100 wagons, tore up rails in more than 100 places, rendered unusable several 50-ton cranes, and caused vast damage to all kinds of railway equipment. The intensive Allied air attacks on French railway centres were the final factor in causing the partial breakdown of the railway system before the Allied landings in Normandy. Robert de Beauflan, broadcasting from Radio Paris on May 23, said that the French railway system was in a state of chaos by reason of the extensive damage to marshalling yards by air raids. On "D" day itself (June 6), the *Basler Nachrichten* stated that the French National Railways then had but 8,200 locomotives and 198,000 carriages and wagons; sabotage and air raiding have contributed to the reductions in rolling stock, as well as German requisitioning for military requirements, both within and outside France, despite the fact that the Armistice terms forbade such a step.

The Position in Savoy

Although the Resistance Movement is operating in many parts of France, and sometimes independently of the main organisation, the greatest concentration of effort appears to be in the Savoy area, where the topographical conditions favour the Patriots and enable them to make repeated and effective attacks on the important railways in the neighbourhood of Bellegarde and Annecy. The railway position in this French territory adjacent to the Swiss border, close to the town of Geneva and south of the Lake of Geneva, continues to be obscure, but there are almost daily disruptions of the traffic. Attacks on trains, bridges, tunnels, and railway installations, are of frequent occurrence, and details of some of them penetrate across the Swiss border. The nature of these reports, some of them contradictory, leaves no doubt as to the seriousness of the position, which, at times, seems to be wholly out of hand, either from the side of the French Patriot Movement or from the Forces of Occupation and their Laval collaborationists. The focus of the railway disorders is Bellegarde, on the Lyons-Culoz-Geneva main line. Bellegarde is an important railway centre, being the effective junction point between the main line and those to Bourg, Chézery, Divonne-les-Bains, and Thonon-les-Bains, *via* Annemasse. The last named, running along the southern shore of the Lake of Geneva, through its extension to the east, provides an alternative railway connection between south-eastern France and Switzerland. This line actually joins the Geneva-Bellegarde line at Longeray-Léaz, 4 miles to the north of Bellegarde, and on this 4-mile section is the Mont Crédo Tunnel which has been one of the main centres of local railway sabotage.

Bellegarde and Mont Crédo Tunnel

On June 9, it was reported that Bellegarde Station had been destroyed by Partisan Forces and the traffic entirely suspended on all the above-mentioned lines. This was said to have followed the abandonment of Bellegarde Station by the whole of its railway personnel as a protest against the arrest of two or three railwaymen by the German Occupation Forces. No telegraph or telephone connection could be obtained with Bellegarde from June 8, and there was great apprehension in Switzerland, for it was known that a special train from Paris conveying Swiss children was due to arrive at Bellegarde on or about that day. Preparations for the reception of that train had been made at Geneva (Cornavin) Station for the early hours of June 9, and it was only on the next day that it was learned that the train had been kept back at the junction station of Ambérieu, about halfway between Lyons and Bellegarde, some 51 miles from the latter. News of this was slow to reach the Swiss authorities because the telegraph connections were broken as far as Culoz, 20 miles to the south of Bellegarde. For a time, also, there was even no news of the Swiss nurses who had been allowed to go to Bellegarde to meet the train. At Bellegarde Station everything which had escaped previous acts of destruction, particularly rolling stock and signalling plant, had been thoroughly destroyed, according to later reports.

On June 13 it became known in Switzerland that the Mont Crédo Tunnel had been blocked, probably also on July 9. Mont Crédo Tunnel, on the Bellegarde-Geneva (Cornavin) main line, is about 2½ miles long and its southern entrance is less than a mile to the north of Bellegarde Station. Between the station and the tunnel the line crosses the River Semine, a tributary of the River Rhône. A train of 65 goods wagons, some of them belonging to the Swiss Federal Railways, was formed by French Partisans, and two locomotives were attached, one in front and a banking locomotive in rear. The train was run into the tunnel where it was derailed, as several lengths of rail had been loosened. A third locomotive was then run full speed against the wreckage of the train to complete the havoc. The Union Jack is stated to have been hoisted by the Patriots on the summit of Mont Crédo. After 15 days, the tunnel was cleared, and a goods train reached Geneva on June 24. Several hundreds of wagons loaded with goods for the Red Cross, and Prisoner-of-War parcels, have since arrived.

It was reported on June 13 that the German Occupation Forces had restored railway communication around Bellegarde to a limited extent, operating only troop trains consisting of a very small number of wagons. On the Bellegarde-Annemasse line no trains could be worked between Longeray-Léaz and Valleiry, eight miles to the east of Bellegarde. A tunnel near Entremont, on this line, is reported to have been made unserviceable. On June 14 it became known that further sabotage had blocked the Annecy-Annemasse line near Evires, 14 miles to the north of Annecy, and an attack was also made on an emergency train which tried to reach Evires from Annecy. Powerful groups of Partisans compelled everyone to leave the train; the locomotive was taken some distance ahead, and then allowed to run at full speed against the stationary train of carriages so that the wreckage blocked the line. This is the usual method of blocking a line when the Partisans are able to stop a train.

Great concern was felt in Switzerland for the many wagons of foodstuff and raw materials, in transit from the Franco-Spanish frontier station of Canfranc, which had arrived at or near Bellegarde. Though they had been left intact, it appeared impossible to get them through to Geneva because of the lack of French locomotives and railway personnel, and the Swiss considered whether it would be practicable for Swiss locomotives and railway staff to fetch them. A few of the wagons were re-directed to Annemasse, whence they were taken to Chênel-Bourg (the Swiss frontier station), a distance of three miles, and then to Geneva (Eaux-Vives) terminus, a further 5½ miles. The children's train, too, was subsequently taken to Annemasse, using the roundabout way *via* Culoz, Aix-les-Bains, and Annecy. At Annemasse the children were transferred to motorbuses.

On June 18 it was reported that traffic on the portion of the Annemasse line which had still been kept open, had also been discontinued, and from that day onward no wagons with parcels for prisoners of war arrived at Geneva (Eaux-Vives) Station. Annemasse Station was reported to have been closed after an attack against Vougy, on the Annemasse to La Roche-sur-Foron line.

The attacks of the Partisans in the region adjacent to the Swiss border are said to have spread further south and west. Thus, it was reported that 40 locomotives had been made unserviceable at Ambérieu, and also that part of the railway personnel of Ambérieu had disappeared into the "Maquis." The ever increasing abandonment of railway stations and lines by the French personnel is said to have forced the Germans

to transfer German personnel from other parts of France, and even from Germany, to the areas concerned.

A Strategic Mountain Road

The railway position in Savoy and adjacent areas, as outlined above, has brought into particular prominence the difficult mountain road known as the Route de la Faucille. It reaches its greatest altitude of 4,339 ft. at the Col de la Faucille, to the west of Divonne-les-Bains, and at times is the only direct connection between Bellegarde and the parts of France to the south of Besançon. The road was blown up by the retreating French troops in 1940, but was later repaired by the Germans. Recent reports stated that the road had been damaged at various points by the Partisans, but that the famous wooden bridge, an emergency structure, near La Fontaine de Napoléon had withstood all attempts to blow it up with dynamite.

Swiss Transit Traffic with Spain

The disruption of Swiss transit traffic with Spain, between Geneva (Cornavin) Station and Canfranc (the Spanish-French frontier station), *via* Lyons and Toulouse, due in part to the heavy Allied air attacks, and in part to the spreading movement of the French Partisans, has brought Swiss imports, mainly imports of fruit, to a complete standstill. To avoid congestion both at Canfranc and at Cerbère, a Spanish Government Decree, issued on June 6, forbids the acceptance of consignments of fruit intended for Switzerland, as there is no guarantee of their being re-forwarded. The first difficulties began as a result of the heavy air bombardment on May 29 of the five Lyons stations (Perrache, Les Brotteaux, Vaise, St. Clair, and La Guillotière), followed by the air bombardment of the Ambérieu railway plant, and by the devastation wrought by the Partisans at Bellegarde. The French railways, which, despite their increasing difficulties, had placed 40 wagons a day at the disposal of the Swiss transit traffic, were subsequently compelled, as a direct result of their losses in rolling stock, to reduce this figure to 10 wagons a day. This assistance enabled the Swiss to effect at least part of their imports of fruit, although these took so long in transit that many consignments arrived in a state of advanced deterioration. From June 8, no train left Bellegarde for Geneva (Cornavin) Station, because of the derailment in the Mont Crédo Tunnel, and only a few wagons arrived *via* the roundabout route through Annemasse, with its terminus at Geneva (Eaux-Vives) Station. The Swiss fruit trade is said to have suffered heavy losses through its inability to get the consignments through. On the suggestion of the French Embassy at Berne, consignments of fruit *en route* for Switzerland, which are held up in France by the disruption of the rail services, are now sold on the spot in France, on behalf of their Swiss owners. This enables the owners to recover part of their loss, the extent of which could not then be estimated, as there were still about 700 wagons of fruit on their way through France.

Despite some delay in transit, we publish the foregoing notes from correspondents in Switzerland and southern France as indicative of the support the Allied effort is receiving from within France, and of the effect of Allied bombing.

Ministry of War Transport Accident Report

Between Floriston and Gretna Junction: L.M.S.R.; May 15

Colonel A. C. Trench inquired into the accident which occurred at about 3.16 a.m. on May 15, 1944, near the Mossband Signal Box, between Floriston and Gretna Junction, L.M.S.R., when the 8.40 p.m. express, Euston to Glasgow (St. Enoch), drawn by "Princess Coronation" type 4-6-2 locomotive No. 6225 and consisting of 12 bogie coaches, of which 5 were 12-wheel sleeping cars, was derailed, except for the last two vehicles. The second coach was thrown across the up track. Three passengers in the leading coach, of which the trailing end was forced forward and crushed against the back of the tender, were killed, although the fact was not discovered for some 15 hours afterwards. Nine others suffered injuries, mostly of a minor kind. The second coach was also extensively damaged. The wheels of a bogie penetrated its side for most of its length away from the corridor and the passengers had a remarkably lucky escape from injury. The third to tenth coaches were derailed but suffered comparatively little damage; the last two coaches remained on the track and were undamaged. Prompt measures were taken to summon assistance and much help was immediately forthcoming from military personnel in the vicinity. The last of the injured passengers was removed by ambulance at 4.45 a.m. The down track was destroyed for the whole length of the derailment and the up track for a short distance. A rail which was torn up swept through and completely destroyed the single storey Mossband Signal Box.

It was a fine, clear, dark night and the train was running at about 55 m.p.h. There is a speed restriction at Gretna Junction, 1¼ miles beyond Mossband, for trains travelling over the former G. & S.W.R. route, as the derailed train would have done, of 50 m.p.h. Colonel Trench attributes the accident to the unsatisfactory nature of the subsoil below the permanent way, which latter had been undergoing extensive maintenance work on the previous day (Sunday) and to failure to impose a temporary speed restriction after that work.

The locomotive left the rails 22 yd. beyond the Mossband skew masonry arch overbridge, towards which the line falls from the water troughs north of the viaduct over the Esk. The bridge affords very little headroom to the railway and any repair, or reballasting of the tracks has to be carried out in such a manner as to avoid raising the final level of the rails. The track in the vicinity is on wet and greasy clay subsoil with a boggy foundation. During the time since the line was re-railed in 1930, the clay has been working up through the ballast and maintenance has needed constant attention; because of the dip in the ground at the spot, satisfactory drainage is almost impossible. The rails are 60-ft. 95-lb. R.B.S. in chairs coach-screwed to timber sleepers. The place was known to be one where enginemen were liable to feel a bump or lurch. The primary reason for the work that had been done on the track was to endeavour to avoid constant labour on maintenance, and not because of any suggestion that the lurch was becoming worse.

As the headroom could not be raised, it was decided to excavate ballast to a depth of 9 in. to 12 in., lowering the track in 3 stages of about 4 in. each, and pack up again in 3 lifts with clean ballast. On Sunday, May 14, this was done throughout the down road from the water troughs to a point some 40 yd. past the bridge, about the heel of some facing points worked from Mossband box. Similar work had been carried out on the up track at the same point on the previous Sunday, and recently at other places in the district where wet clay had been giving trouble. After lowering the track by removal of dirty ballast it was packed up with new by shovel packing three times and beater packing twice, the passage of a ballast train rolling the track in both directions between each packing. The Engineer's staff considered that the track was then in a better condition than previously and that there was no need for any speed restriction. None had been found necessary after carrying out the work on the up track.

The down track was re-opened for traffic at 6.45 p.m., but Permanent Way Inspector Bell instructed Provisional Ganger Wilson to look at it at 10 p.m. by which time a number of trains would have been over it, to make certain that the facing points at the north end of the stretch were all right. Six freight trains had passed by that hour and Wilson noticed the joints immediately south of the points to be ¾ in. low, but observed no other defects. He called out Ganger Allison and they jacked the track up, packed it, and saw 2 freight trains pass without further sign of weakness. They walked back, but it was getting dark and they saw no other defects.

From the time the track was re-opened 23 trains passed and Colonel Trench refers more particularly to the running of the last four preceding the ill-fated train; these were a newspaper train to Glasgow, parcels train to Perth, an express to Stranraer and another to Perth, at speeds varying between 45 and 60 m.p.h.

The driver of the first one felt a lurch, both south and north of the bridge, worse than the usual lurches at the point, and considered stopping at Gretna Junction to report, but concluding it was partly due to a rough-riding engine, did not do so. His fireman noticed the lurches, but neither driver, firemen nor guards of the next two trains noticed anything abnormal. Driver Webb, of the train immediately in front of the one which left the rails, said he felt nothing more than the usual lurch. Guard Dixon also noticed nothing unusual, but Sleeping-car Attendant Whitlock, who had been examining tickets, came to Dixon and said he had found a quantity of crockery fallen on the floor of his pantry, in the trailing end of the second coach, although he himself had felt nothing unusual. They went to investigate and Dixon stopped the train at Beattock by applying the brake—as the driver did not himself stop for water—at about 3.45 a.m., informing the signalman that he wished the examiner there to inspect it.

It was alleged that Webb then said that they got a terrible lurch approaching Gretna and that he thought the engine was off the road. Webb firmly denied this, but said he might have made some remark about his guard thinking they had been off the road. Dixon went to telephone the reason for stopping to Carlisle Control, but the guard of the derailed train was

then heard speaking to it and asking for doctors and ambulances. Nothing could be found wrong with Dixon's train and it proceeded on its way.

Driver Mitchinson, who took over the Euston-Glasgow express at Carlisle, said that approaching Mossband Bridge his engine appeared to sink and then roll to the left: he made a partial brake application, after which the engine gave another lurch to the left and two more rolls. He then realised they were derailed. He and Fireman Graham were thrown into the left side of the cab, picking themselves up a good deal shaken. Graham said he was right enough to go to Gretna Junction to protect the up line. He took a hand lamp and covered the 1¼ miles within 19 mins., a very creditable achievement. Two U.S.A. soldiers, at the driver's request, followed him, as Mitchinson felt anxious about Graham's ability to get to the box. As Mossband box was demolished, Guard Irving had to go back to Floriston.

Inspecting Officer's Conclusions

Measurements and photographs leave no doubt that the cause of the accident was instability of track foundation. A suggested explanation is that a fairly solid crust had formed in the lower portion of the ballast over the top of the clay subsoil and that the removal of much of this original ballast left the foundation of the new in a temporarily unstable condition, liable to continue until the track had been more thoroughly rolled into solidity by traffic. The passage of various trains at their normal speeds, culminating in the four with heavy engines at express speed, immediately before the derailment, had a progressively adverse effect. In the ten subsequent days, with traffic operating under a speed restriction, the track required at the point of derailment almost daily attention and lifting, with total lifts of 9½ in. on the cess-rail and 6½ in. on the six-foot rail. Evidently a good foundation at this point is a matter of exceptional difficulty.

In the light of actual events it is clear that a speed restriction should have been imposed when the line was re-opened for traffic on May 14, but as regards foreseeing the necessity for such restriction it must be appreciated that no trouble was experienced with unrestricted speed after work was done on the up track on the preceding Sunday. Possibly the clay under the down track was nearer the surface or more unstable, but it is probable that the conditions the previous week were nearer the safety margin than was realised, and that a speed restriction should have been imposed, at any rate until the next day, when the effect of a night's heavy traffic could be noted and any necessary further action taken.

Colonel Trench considers therefore that an error of judgment was committed in this respect and that such extensive work, at a place known to be particularly troublesome, should have justified a temporary speed restriction from the first, arranged at the same time as the engineer's possession and single line working. The ganger might be criticised, when surprised at 10.45 p.m., at the extent the track had given way, for not taking more drastic action to safeguard it against further deterioration during the night, but it would be unfair to disregard the fact that the day's work had been carried out under his Inspector, the Chief Inspector and District Engineer, all of whom had been satisfied that no speed restriction was called for.

On the whole Colonel Trench is satisfied, although not altogether crediting Driver Webb's statements about what was or was not said at Beattock, that there was no neglect on the part of preceding drivers to give warning as to the unsatisfactory condition of the track. He is also satisfied that there was no delay, either in the staff realising that the leading coach had been reversed end for end, with the unfortunate result that its trailing compartment was crushed instead of the strengthened brake compartment, or in using every effort to rescue casualties at the earliest possible moment. It was known that there had been passengers in this compartment. The rescuers climbed on the side of the coach and repeatedly called out to ascertain if anyone was still trapped; further search was made as soon as it was daylight. There is little doubt that all those who lost their lives were killed instantaneously.

Remarks

The company's officers stated that there was every prospect of a new bridge being constructed soon after the war on a somewhat different road alignment; the abolition of the present bridge would then enable them to raise the track and thus obtain a crust of sufficient solidity to support the permanent way in a more satisfactory manner. As inquiry indicates this to be very much in the air, it is suggested that the company investigate the matter more closely and, unless their information as to a new bridge is confirmed, that they should consider some more permanent remedy for the local difficulties, although no such remedy could be as satisfactory as the elimination of the head-room limit and possibility of raising the track. Extensive works are, however, not practicable at present. A point not to be overlooked in connection with speed restrictions is that, even with a comparatively high one the "C" and "T" boards are likely to remind drivers to be particularly careful in reporting immediately any questionable condition of the track.

Staff and Labour Matters

Gallantry of Railwaymen

We recorded in our July 14 issue, the findings at the inquest on James William Nightall, a fireman employed by the L.N.E.R. who met his death as a result of an explosion which occurred on a train on which he was acting as fireman, and it has now been announced that the King has awarded the George Cross to Nightall (deceased) and to the driver of the train, Benjamin Gimbert, both of March, L.N.E.R.

The announcement states that as an ammunition train was pulling into a station in Cambridgeshire, the driver, Gimbert, discovered that the wagon next to the engine was on fire. He immediately drew Nightall's attention to the fire and brought the train to a standstill. By the time the train had stopped the whole of the truck was enveloped in flames, and, realising the danger, the driver instructed the fireman to try to uncouple the truck immediately behind the blazing vehicle. Without the slightest hesitation Nightall, although he knew that the truck contained explosives, uncoupled the vehicle and rejoined his driver on the footplate. The blazing van was close to the station buildings, and was obviously liable to endanger life in the village. The driver and fireman realised that it was essential to separate the truck from the remainder of the train and run into the open. Driver Gimbert set the engine in motion, and as he approached a signal box he warned the signalman to stop any trains which were likely to be involved and indicated what he intended to do. Almost immediately the vehicle blew up. Nightall was killed, and Gimbert was very severely injured.

Gimbert and Nightall were fully aware of the contents of the wagon which was on fire, and displayed outstanding courage and resource in endeavouring to isolate it. When they discovered that the wagon was on fire they could easily have left the train and sought shelter, but realising that if they did not remove the burning vehicle the whole of the train, which consisted of 51 wagons of explosives, would have blown up, they risked their lives to minimise the effect of the fire. There is no doubt that if the whole train had been involved, as it would have been but for the gallant action of the men concerned, there would have been serious loss of life and property.

L.P.T.B. Conductress's Claim for Overtime

The Court of Appeal—the Master of the Rolls, Lord Justice MacKinnon, and Lord Justice Luxmoore—on July 14 dismissed the appeal of the defendants, London Passenger Transport Board, from a decision of Judge Austin Jones, given at Westminster County Court, awarding the plaintiff in the action, a conductress, 6s. 8d. overtime pay. The Board said that the plaintiff was not entitled to the money and alleged that she was party to a combination by bus drivers and conductors on a certain route, to indulge in deliberate slow running as a protest against the introduction of a new schedule last October, which reduced the running time. The county court Judge held that the Board had not proved the allegation that the plaintiff was party to a combination.

Mr. John Morris, K.C. for the Board, said that it was an implied term of the contract of service of drivers and conductors that overtime would be paid only if it did not result from deliberate slow running. Mr. Bechhofer Roberts, for the plaintiff, said that there was no evidence before the county court Judge that the driver of her bus was guilty of deliberate slow running.

The Master of the Rolls, giving judgment dismissing the appeal, said that the county court Judge's finding completely destroyed the only defence pleaded by the Board, which was that the plaintiff was a party to a combination to indulge in slow running. In the circumstances it could not be said that her overtime was not unavoidably incurred as a result of the exigencies of her service. The implied term in the contract of service suggested by Mr. Morris amounted to this:—That if it was the fault of the driver and not that of the plaintiff that her bus was late, she was to lose her overtime as the result of his breach of duty. That was an implication which carried what seemed to his Lordship a plain injustice; if that was a term of the contract of service it was one which no court would be justified in implying unless it was quite clearly understood between the parties. The appeal would be dismissed. Lord Justice MacKinnon and Lord Justice Luxmoore agreed.

New Colombian Highway.—A highway between Bogota and Giradot, Colombia, was opened last February when the bridge was completed over the River Bogota at Portillo. The railway connection between the two towns is circuitous.

Accidents on British Railways in 1943

The annual report of the Chief Inspecting Officer of Railways shows that only one train accident involved fatalities to passengers, namely, four. This is the lowest for seven years, notwithstanding increases on main-line companies of 20 per cent. in the number carried (excluding season-ticket holders) and of 50 per cent. in average distance travelled compared with pre-war. By the end of the year freight traffic was also higher than before the war by no less than one million ton-miles for every hour of every day. The conjunction of unprecedented traffics with reduced services resulted in passenger crowding and increased work in marshalling yards and goods depots, which in turn affected the incidence of casualty among passengers and staff.

Sickness in December imposed great strain and long hours, particularly among operating and maintenance grades, an increasing number of whom have passed normal retiring age. Nevertheless, the effort made exceeded that in 1942, and the work done in handling, for instance, merchandise and minerals was nearly 80 per cent. more than pre-war; the report concludes by saying that, having regard to the complexities of operation under war conditions, to the longer hauls and abnormal flow, to shortages of power and staff, and to restricted lighting, the standards of efficiency and safety attained were remarkable, and reflect the greatest credit on all railway men and women.

Altogether, 393 train accidents of all kinds were reported, of which 195 were caused by human failure. The total of 34 fatalities among passengers, railway servants, and other persons compares with 46 in 1942, and the average of 39 for the five-year period 1935-39. Among passengers, the liability to casualty in train accidents was one killed in some 440 millions carried, and with regard to railway servants, the passenger and freight train-miles worked were about 77 millions per fatality.

In accidents connected with the movement of railway vehicles, exclusive of train accidents, 145 passengers were killed, as compared with an average of 69 for the period 1935-39. Of this number, 89 occurred in falling from platforms and trains, and when entering or alighting from trains, as compared with 83 in 1942, and the annual average of 53 during 1935-39. It is stated that these accidents were due largely to misadventure or were caused by want of caution on the part of passengers themselves. There were 296 fatalities among railway servants (15 of them women) in movement and non-movement accidents, as compared with 284 in 1942, and with the average of 228 for the five-year period 1935-39. Of the total, 52 were killed while working on the line, 83 while walking or standing on the line on duty, and 56 during shunting operations; these fatalities included six women.

Blackout continued to be a contributory factor in the incidence of accidents to passengers and railway servants. Of the 145 passenger fatalities in movement accidents, 70 occurred after dark, including 29 when attempting to enter or alight from trains, and falling off platforms and being struck by trains. Of the 548 serious casualties to railway servants during blackout in movement and non-movement accidents, restricted lighting is considered to have contributed to 183. Disappointment is expressed that the improvements in lighting of trains, platforms, marshalling yards, locomotive depots, etc., did not have greater effect, and it is necessary to continue to rely mainly on propaganda for impressing on everyone the need for exercising more personal care. On the other hand, the Chief Inspecting Officer states that, bearing in mind the extent of the increases in traffic, the introduction of better lighting has undoubtedly benefited the situation, and still further improvements are in contemplation, which, if they can be carried out, should increase both efficiency and safety of operation next winter.

Parliamentary Notes

L.M.S.R. Bills

The following House of Commons Committee has been appointed to consider the London Midland & Scottish Railway Bill and the London Midland & Scottish Railway (Canals) Bill:—Sir Harry Selley (Battersea South—C.), Chairman; Mr. W. Windsor (Kingston-upon-Hull—Lab.); Mr. D. Eccles (Chippenham—C.); and Mr. P. W. Jewson (Great Yarmouth—Lib. Nat.).

The Butterley Company has withdrawn its petition against the London Midland & Scottish Railway (Canals) Bill.

Petitions against the London Midland & Scottish Railway Bill have been deposited by the Staffordshire County Council (against alterations); the Salop County Council (against alterations); and the Montgomery County Council (against alterations).

These three County Councils have also deposited petitions against the London Midland & Scottish Railway (Canals) Bill, all against alterations.

Questions in Parliament

Rationalisation Economies

Mr. M. P. Price (Forest of Dean—Lab.) on July 19 asked the Minister of Food whether he could state the value of the economy caused by the rationalisation of transport of milk.

Colonel J. J. Llewellin (Minister of Food) stated in a written answer: Concerning the collection of milk, rationalisation schemes in force save 433,000 miles of motor haulage and 30,000 gal. of petrol a week. As to the distribution of milk, the figures are 879,000 miles and 39,000 gal. a week and 6,700 men and 2,150 women released.

Prisoners of War Accommodation

Captain A. S. Cunningham-Reid (St. Marylebone—Ind.) on July 27 asked the Secretary of State for War whether first class carriages were reserved on British railways for German officer prisoners.

Major Arthur Henderson (Financial Secretary to the War Office): No, Sir. I would refer Captain Cunningham-Reid to the reply I gave Mr. Ellis Smith on July 20.

Captain Cunningham-Reid: I do not know where the Minister got that information, but may I ask whether he is aware that on the train leaving Euston at 10.25 on July 6, a whole first class carriage was reserved for a German prisoner officer and his escort of three, and that first class and third class passengers in consequence had to stand in the corridor outside?

Major Henderson: I have already indicated that it is the policy of the Department that German officer prisoners shall travel third class. I will certainly look into the actual incident that occurred.

Air Transport in Argentina

Several changes were reported in the Argentine commercial air line service in 1943. The Sociedad Argentina de Navegación Aerea (S.A.N.A.) suspended its services between Buenos Aires and Colonia (Uruguay). Linea Aerea Noroeste (L.A.N.E.) initiated operations. L.A.N.E. is a new Army-operated line from Buenos Aires to Iguazu inaugurated during December, 1942. The Linea Aerea Suroeste (L.A.S.O.) and Linea Aerea Noroeste are the two operating internal air lines.

Other air lines which provided services in Argentina during 1943 were: The two Argentine air lines, Aeroposta Argentina, between Buenos Aires and the southern part of the country; and Corporación Sudamericana de Servicios Aeroeos, between Buenos Aires, Asuncion, and Montevideo. The Uruguayan line, Compañia Aeronàutica Uruguayan S.A. (C.A.U.S.A.) operated between Buenos Aires and Montevideo; and the Brazilian line (successor to Condor) Servicios Aereos Cruseiro do Sul (Cruzeiro), between Buenos Aires and Rio de Janeiro. Pan American Airways (P.A.A.) and Pan American-Grace Airways (Panagra) provided during the year 13 regular round-trip services a week between Argentina and the United States, with additional services to Santiago and Rio de Janeiro.

The most recent figures of air traffic are those for the first nine months of 1943. These give distance flown, 1,999,253 km.; number of trips, 3,683; hours flown, 8,612; passengers carried, 49,132; mail carried, 67,849 kg.; express carried, 323,733 kg. As compared with previous years, the number of passengers carried increased by 19,490 over the figures for 1940; 8,634 over 1941; and 9,732 over 1942. For purposes of comparison, figures for the full years of 1942 are: Distance flown, 2,247,335 km.; passengers carried, 55,014; mail, 78,968 kg.; and express, 210,518 kg.

(*See editorial article on page* 104)

Heavy Traffics in Nicaragua.—The Pacific Railway Company of Nicaragua announced recently that its passenger traffic during 1943 showed an increase of approximately 100 per cent. over that for the previous year.

THE RAILWAYS OF THE GUIANAS

(*Concluded from page* 112)

runs. In fact, the line was originally built to tap the gold-mining region, but it is now used chiefly to transport general goods and passengers. The high cost of operation has caused the rates to be increased to such a level that the railway has never proved of great economic value to the area.

Communication in French Guiana (Guyane or Cayenne), the only French possession in South America, is mainly by water. The few roads are generally poor. There are no public railways; the only line, a private railway, is a decauville track of 0·60 m. gauge, 12 km. in length, owned by the penal settlement of Chantiers Chavians, and connecting St. Laurent de Maroni with St. Jean. The colony has a population of 25,679, and an estimated area of 34,740 square miles.

Notes and News

Assistant Accountants Required.—The Nigerian Government Railway requires the services of assistant accountants. Details are given in our Official Notices on page 123.

Diesel Engine Manufacture in India.—Diesel engines up to 110 h.p. are being manufactured by the Cooper Engineering Works in Satara, Bombay, according to Indian press reports. This company formerly produced only agricultural implements.

Buenos Ayres Western Moratorium.—Meetings of holders of debenture stocks and of the 5 per cent. 3-year secured notes in the Buenos Ayres Western Railway Limited have passed resolutions for the extension of the moratorium period until June 30, 1945.

Beira Railway Receipts.—For the month of May, 1944, the approximate gross receipts of the Beira Railway Co. Ltd. were £89,932 and for the eight months ended May 31, 1944, were £632,217 as compared with £67,236 and £538,991 for the corresponding periods in the previous year. The number of miles open was 204.

Liége Local Railways.—A recent report indicates that the number of passengers carried on the system of the Ch. de f. Economiques de Liége-Seraing et Extensions, of Liége, was appreciably higher in 1943 than in the previous year. The extension of the company's trolleybus line from Flémalle to Engis, a distance of 2½ miles, was completed in 1943.

Bomber Crashes on G.W.R. Main Line.—A bomber crashed on the Great Western Railway main line near Maidenhead on July 30. The pilot had tried to touch down on an airfield, but his run was too short and the machine burst into flames. All the crew were rescued. Some damage to the permanent way was caused, both the up and down lines being affected, but the main-line service was maintained by diversion with hardly any delay.

W. & T. Avery Limited.—Net profit for the year to March 31, 1944, at £139,377 compares with £138,150 for the previous year and is arrived at after making full provision for taxation. After adding £66,818 brought forward and deducting preference dividends and the interim dividend of 5 per cent., less tax, on the ordinary stock, the surplus available for disposal is £177,064 (£176,306). The final ordinary dividend is 10 per cent., less tax, making 15 per cent. for the year (same). To general reserve is added £10,000, making that reserve £390,000; a sum of £45,000 is placed to contingency (war) reserve, increasing it to £205,000; and £10,000 is transferred to pensions fund reserve, leaving £68,465 to be carried forward.

International Sleeping Car Company.—At a recent meeting of the debenture holders of the 1919 5½ per cent. loan of the Compagnie Internationale des Wagons-Lits et des Grands Express Européens the following decisions were reached: (*a*) to pay, on May 31, 1944, the coupons nos. 46, 47 and 48 fallen due on October 1, 1942, April 1, 1943, and October 1, 1943; (*b*) to postpone again the payment of the coupon fallen due on April 1, 1944, and of that which is to mature on October 1, 1944, as well as to suspend the payment of the coupons which are to fall due on April 1, 1945, and October 1, 1945; and (*c*) to continue the suspension of the redemptions of debentures which ought to have taken place in 1941, 1942, 1943 and 1944, and to resume the redemptions as from April 1, 1947, so that all drawings envisaged in the redemption plan will be postponed by six years as from April 1, 1941, the last drawing to take place on April 1, 1956, instead of on April 1, 1950. The board has been authorised by the meeting of the debenture holders to put these measures into effect.

Vickers Limited.—The following interim dividends were declared on July 20: 2½ per cent. actual, less tax, on the preferred 5 per cent. stock; 2½ per cent. actual, less tax, on the 5 per cent. preference stock; and 2½ per cent. actual, free of tax up to 6s. in the £, on the cumulative preference stock.

The Socompa Pass Transandine Railway.—Work is reported to be in progress on the last section in Argentina of the railway to connect Salta (Argentina) with Antofagasta (Chile), *via* Positos, the Socompa Pass, and Imilac. Earlier details (with map) of this Transandine railway were given in our issue of September 3, 1943 (page 241).

Rhodesia Railways Earnings.—The approximate gross receipts of The Rhodesia Railways Limited for the month of May, 1944, were £556,006 and for the eight months ended May 31, 1944, were £4,267,929 as compared with £505,136 and £3,929,759 respectively for the corresponding periods in the previous year. The number of miles open was 2,442.

Edgar Allen & Co. Ltd.—After providing for depreciation, taxation on profits earned up to date of balance sheet, and W.D. Acts, the profit for the year ended April 1, 1944, was £54,299 (£46,455), and £37,341 was brought forward, making £91,640. A transfer is made to general reserve account of £20,000 (same), and the dividend on the ordinary shares for the year is at the rate of 12½ per cent. (same), leaving £46,184 to be carried forward.

The Railways of Ecuador.—Railway construction in Ecuador has been almost entirely at a standstill for some time, and the only work in progress is the completion of the Tambo-Azogues section of the Sibambe-Cuenca Railway (3 ft. 6 in. gauge). All Sunday traffic on the Guayaquil & Quito Railway has been suspended since the middle of 1943. The corner stone of the new Guayaquil station of the Guayaquil & Salinas Railway was laid in January last. The site is on the right bank of the Salado, an arm of the Pacific Ocean forming the western boundary of the city of Guayaquil. The railways of Ecuador were briefly described (with a map) in our issue of November 19, 1943 (page 505).

L.M.S.R. Valuation for Rating.—The Railway Assessment Authority on July 21 "completed" the part of the third railway valuation roll which relates to the London Midland & Scottish Railway Company. Average net receipts of the company for the five accounting years 1935-39 and the cumulo net annual value are confirmed at £11,872,438 and £1,747,573, respectively. The authority rejected a representation made by the London County Council that this *cumulo* net annual value should be increased. In completing the roll the authority has determined various representations by the company and the local authorities on matters of apportionment and upon the exclusion and inclusion of premises in and from the roll. The main block apportionments remain the same, or virtually the same, as the draft roll, namely:—principal undertaking £1,725,883 (Class A £1,401,407, and Class B £324,466), docks £18,665, and canals £3,025. The resultant total rateable value is £383,381 (draft roll £383,341). Subject to wartime difficulties the authority hopes to complete the L.N.E.R. part of the third roll and the second London Passenger Transport roll early in September next.

North Glamorgan Wagon Co. Ltd.—Trading profit for the year to March 31, 1944, was £3,465 (£3,369), and £26,689 was brought in, making £30,154 available. The final dividend is 2½ per cent., making 5 per cent. for the year, less tax, and the carry forward is £28,943. The rate of compensation payable by the requisitioning authority in respect of the company's railway wagons

British and Irish Railway Stocks and Shares

Stocks	Highest 1943	Lowest 1943	Prices August 1, 1944	Prices Rise/Fall
G.W.R.				
Cons. Ord.	65¼	57⅛	59⅛§	– 2⅛
5% Con. Pref. ...	120½	108	117⅛§	– 2
5% Red. Pref. (1950)	110½	106	104§	– 1
5% Rt. Charge ...	137½	123½	132§	+ 1⅛
5% Cons. Guar. ...	135⅛	121⅞	130§	– 1⅛
4% Deb.	118	107½	114½	– –
4½% Deb.	119	109⅞	115½	– –
4½% Deb.	124½	116	120½	– –
5% Deb.	138	127	134½	+ ½
2½% Deb.	77	72½	74½	– –
L.M.S.R.				
Ord.	34⅛	28	30⅛§	– 1⅛
4% Pref. (1923) ...	66½	58	58⅛§	– 2½
4% Pref.	80⅛	73	76⅛§	– 2½
5% Red. Pref. (1955)	105¼	102	102½	– 1
4% Guar.	107	98½	100§	– 2½
4% Deb.	109½	103¼	104½	– 1
5% Red. Deb. (1952	111½	108	109½	– –
L.N.E.R.				
5% Pref. Ord. ...	12⅞	7½	8½	– ¼
Def. Ord.	5⅜	3⅛	4½	+ ¼
4% First Pref. ...	66½	57½	58§	– 3
4% Second Pref. ...	36½	30½	32§	– 1½
5% Red. Pref. (1955)	99⅜	93	100½	– –
4% First Guar. ...	102⅜	94	98§	– 2
4% Second Guar. ...	93½	85⅜	90½§	– 1⅜
3% Deb.	86⅜	78⅜	81⅜	– 1⅜
4% Deb.	109⅞	101⅜	104	– ½
5% Red. Deb. (1947)	106½	102	103	– –
4½% Sinking Fund Red. Deb.	108	103½	105½	– –
SOUTHERN				
Pref. Ord.	80	72½	75½§	– 2½
Def. Ord.	26⅜	20⅜	24½	– 1
5% Pref.	119½	106⅜	116½§	– 2
5% Red. Pref. (1964)	114	108½	114½	– –
5% Guar. Pref. ...	136	122	131½	– –
5% Red. Guar. Pref. (1957)	117	109⅜	114½	– –
4% Deb.	117½	106	112½	– ½
5% Deb.	137	126	134	– –
4% Red. Deb. (1962-67)	112	106½	109½	– –
4% Red. Deb. (1970-80)	112	107	110	+ ½
FORTH BRIDGE				
4% Deb.	109	104⅜	104	– –
4% Guar.	105	102½	102½	– –
L.P.T.B.				
4½% "A"	125½	114	121½	– –
5% "A"	133⅞	123	130½	– –
3% Guar. (1967-72) ...	100½	97	99	– –
5% "B"	124	114	121½	– –
"C"	72	53	72	– –
MERSEY				
Ord.	34½	27	33½	– –
3% Perp. Pref. ...	68	59½	69	– –
4% Perp. Deb. ...	104	102½	103	– –
3% Perp. Deb. ...	83	78½	79	– –
IRELAND* BELFAST & C.D.				
Ord.	9	6	9½	– –
G. NORTHERN				
Ord.	24½	16	25	– 1½
Pref.	—	—	44	– ½
Guar.	—	—	68	– –
Deb.	—	—	86½	– ½
G. SOUTHERN				
Ord.	30	9½	55	– ½
Pref.	30	11	55	– 1
Guar.	64	26½	72½	– ½
Deb.	88½	51⅜	94§	– 1⅛

* Latest available quotations § xd

OFFICIAL NOTICES

IT is desired to secure the full commercial development in the United Kingdom of British Patent No. 505136, which relates to "Improved Means for Securing Railway Rails to Sleepers," either by way of the grant of licences or otherwise on terms acceptable to the Patentee. Interested parties desiring copies of the patent specifications should apply to STEVENS, LANGNER, PARRY & ROLLINSON, 5 to 9, Quality Court, London, W.C.2.

will be subject to the appropriate age modification as at January 1, 1944.

Great Western Railway.—The Directors of the Great Western Railway Company have declared an interim dividend of 2 per cent. for the half-year ended June 30 on the consolidated ordinary stock. The warrants will be posted on or about August 22.

Southern Railway Company.—The directors announce that the estimated net revenue accruing to the company for the first half of the year is sufficient to pay (less tax at the rate of 10s.) interim dividends of 2½ per cent. on the guaranteed preference and preference stocks and 2½ per cent. on the preferred ordinary stock, and such interim dividends will be paid accordingly. An interim dividend of 2½ per cent. was paid on the preferred ordinary stock last year. The warrants will be posted on August 16 to those proprietors whose names were registered in the books of the company on July 5, on which date the balances were struck.

London & North Eastern Railway Company.—At a meeting of the board of directors of the London & North Eastern Railway Company the undermentioned interim dividends for the past half-year were declared: 2 per cent. actual for the half-year on the 4 per cent. first guaranteed stock; 2 per cent. actual for the half-year on the 4 per cent. second guaranteed stock; 2 per cent. actual for the half-year on the 4 per cent. first preference stock; 2½ per cent. actual for the half-year on the 5 per cent. redeemable preference stock, 1955; and 1 per cent. actual for the half-year on the 4 per cent. second preference stock; in each case less tax at 10s. in the £. The warrants for these dividends will be posted on or about August 18.

Southend Transport Pool.—Approval in general terms was given on July 25, by the Southend Corporation, to a transport co-ordination and pooling scheme proposed by the Tilling Group of Companies. It is intended to cover motorbus and trolleybus services, in both the town and outlying districts, operated by the Southend Corporation, the Westcliff-on-Sea Motor Services Limited, and the Eastern National Omnibus Co. Ltd. Both the companies are members of the Tilling Group, and the Eastern National Omnibus Co. Ltd. is a railway associate in which both the L.M.S.R. and the L.N.E.R. have substantial shareholdings. The intention is that services shall be co-ordinated, receipts pooled, and mileages shared in agreed proportions, for a period of not less than 5 years. The Corporation and the Westcliff Company will each take 45·9 per cent. of the pooled receipts, and the Eastern National Company 8·2 per cent. It will be recalled that comparable arrangements have been made with considerable success by the Tilling Group at Brighton, Bristol, Gloucester, Keighley, Plymouth, etc.

Great Northern Railway Company (Ireland).—The directors have decided, subject to audit, to pay on September 30 next an interim dividend of £2 per cent. (less Tax) in respect of the year 1944 to the holders of the consolidated 4 per cent. guaranteed stock who are registered at the closing of the transfer books on August 30.

London Midland & Scottish Railway Company.—At a meeting of the board on July 27, it was decided to make interim dividend payments for the past half-year on the 4 per cent. guaranteed stock, the 4 per cent. preference stock, and the 4 per cent. preference (1923) stock at 2 per cent. actual, less tax at 10s. in the £. Warrants will be posted on August 22.

London Passenger Transport Board.—The London Passenger Transport Board announces that a payment on account of interest on London Transport "C" stock for the financial year ending December 31, 1944, will be made by the Board's Registrars, the Bank of England, on August 25, 1944, to all holders of London Transport "C" Stock whose names are registered in the books of the Bank of England at the close of business on August 1, 1944, such payment to be at the rate of 1¼ per cent. actual (the same rate as in the previous year) less tax at 10s. in the £.

"Your Paper Goes to War."—A mobile exhibition with this title has been organised by the Waste Paper Recovery Association Limited and is to tour industrial premises in the principal cities, at first mainly in the Midlands and the south of England. The exhibition, which represents a travelling miniature of the recent successful "Paper Packs a Punch" exhibition organised by the Waste Paper Recovery Association near Marble Arch, was inaugurated on July 27 by Mr. C. U. Peat, M.C., M.P., Joint Parliamentary Secretary, Ministry of Supply. Mr. Peat said that his Ministry greatly appreciated the help which it had received from the Waste Paper Recovery Association in the recovery of waste paper. Since the outbreak of war approximately 3,600,000 tons of paper had been salvaged from all sources. Paper was now being consumed at the rate of 2,000 tons a day; and it had to be remembered that much of this represented irrecoverable consumption. Those who saw the exhibition would be surprised at the many and diverse uses to which paper was being put in furtherance of the war effort. Mr. S. T. Garland, General Manager of the Waste Paper Recovery Association, in replying, said that, due to restrictions on the private use of paper, it was not possible to rely to the same extent as formerly for paper salvage on the homes of the people; more dependence would have to be placed on what could be salvaged from factories and offices, and it was the purpose of the present exhibition to stimulate still more the recovery of paper from premises of the last-named types.

Belfast and County Down Railway Company.—Sufficient profits have been earned to meet the interest on the 4½ per cent. "A" preference stock for the half year to June 30.

Post-War Locomotives for Netherlands.—Fifty locomotives ordered by the Netherlands Government in London are now stated to be under construction at Gothenburg, Sweden.

East Kent Light Railways Company.—Notice is given that on July 19, 1944, a scheme of arrangement between this company and its creditors (which scheme contains no provision for settling the rights of any classes of shareholders as among themselves or for raising additional share or loan capital), was filed in the Central Office of the Supreme Court. A copy of the scheme will be furnished to any person requiring it by Lawrance Messer & Co., 16, Coleman Street, E.C.2, solicitors for the company, or at the office of the company, 3, Copthall Buildings, Copthall Avenue, E.C.2, on payment of the regulated charges for the same.

Contracts and Tenders

It is reported that orders for six locomotives have been placed by Portuguese railways among the following firms in Spain: Sociedad Española de Construcciones; Babcock & Wilcox (Bilbao); Devis Works (Valencia); and Maquinista Terrestre y Maritime (Barcelona).

Below is given a list of orders placed recently by the Egyptian State Railways:—

Cammell Laird & Co. Ltd.: Fireboxes, firehole plates.

North British Locomotive Co. Ltd.: Slidebars, boilers for engines.

Attwater & Sons Ltd.: Amber mica.

Bullers Limited: Insulating materials.

Steel, Peech & Tozer Branch of the United Steel Cos. Ltd.: Axles.

Thos. Firth & John Brown Limited: Tyres.

D. B. Reynolds Limited: Shears.

Metropolitan-Vickers Electrical Export Co. Ltd.: Copper joints, etc.

R. A. Lister & Co. Ltd.: Auto trucks and trailers.

J. Blakeborough & Sons Ltd.: Sluice valves.

Babcock & Wilcox Limited: Forged steel globe valves.

Ham, Baker & Co. Ltd.: Sluice valves.

Railway Stock Market

Stock markets have been less active, but the general undertone, particularly in industrial securities, remained firm, despite profit-taking being more in evidence after the recent strong advance in values. British Funds again showed a tendency to move higher in price, sentiment reflecting the further indication of the Government's intention to continue its cheap money policy after the war. Home rails remained a neglected market, the interim dividend decisions, which in every case was the same as a year ago, not attracting attention to the stocks; the interims were in accordance with general expectations because of the restrictive influence of the fixed rental agreement.

With Great Western ordinary, Southern preferred and also L.N.E.R. and L.M.S.R. preference stocks now "ex" the half-yearly payments, however, their generous yield basis has tended to be emphasised; but buying has not been on a scale sufficient to affect prices, which, allowing for dividend deductions, showed fractional declines on balance. The market is confidently expecting dividend totals for the current year to be the same as for 1943. There is talk of a possible small increase in the case of L.M.S.R. ordinary, although this will depend on whether the allocation to contingencies is continued at the same level as for 1943, and no reduction in this appropriation generally is considered likely.

The Argentine Government's demand to the railways for the deposit of nearly £4,000,000 with the Labour Office, in view of an apparently new interpretation placed on the award by President Justo, was regarded as indicating the difficult attitude now being adopted by the Argentine authorities. Argentine railway debenture stocks moved back several points although selling was not heavy. Later, preference and ordinary stocks tended to rally.

Sentiment, of course, has also been affected by the strained relations between the Argentine and the U.S.A. The absence of heavy selling of Argentine railway securities, despite the difficulty of assessing the outlook until the authorities in the Republic adopt a more reasonable attitude, reflects the disposition to take a hopeful view of long-term prospects, although it is realised that unless the Argentine Government takes a fair and reasonable attitude to the railways, they will not be able to benefit from the increased prosperity of Argentina after the war, when there will be large demand for South American products for the rehabilitation of Europe.

As an exception to the general trend Cordoba Central Trust 3½ per cent. debentures rose 4 points to 96 on the announcement that the Argentine Government is to redeem at par on November 1 the State Railways 4 per cent. Sterling Bonds. The latter are held by the Cordoba Central Trust and Argentine Transandine Holdings. Canadian Pacifics moved back, reflecting the reactionary tendency in dollar stocks.

Great Western ordinary was 59¾ xd., compared with 61½ a week ago, and L.M.S.R. ordinary 30½, compared with 31½. L.M.S.R. senior preference was 76½ xd., against 79 a week ago, and the 1923 preference 59 xd., compared with 60½. L.N.E.R. preferred eased to 8⅝, and the deferred to 4½. This railway's second preference was 32¾ xd., compared with 33½ a week ago, and the first preference 58½ xd., compared with 60½. Southern preferred was 76 xd., against 77½, and the deferred 24⅜, against 25. London Transport "C" eased to 71 and is on a smaller yield basis than the equity stocks of the main-line railways, partly because of the assumption that there is not the same uncertainty as to the post-war positions as in the case of the main-line companies. It is to be hoped that as soon as is practicable the Government will give a clearer indication of its views as to the important question of post-war transport organisation and control. Nevertheless, all points considered, a good case can be made out for the belief that equity and preference stocks of the main-line railways will have scope for considerable improvement in price, assuming, of course, that the railways receive a "square deal" from the authorities after the end of the war.

Traffic Table and Stock Prices of Overseas and Foreign Railways

	Railways	Miles open	Week ending	Traffic for week: Total this year	Traffic for week: Inc. or dec. compared with 1942/3	No. of Weeks	Aggregate traffics to date: Totals 1943/4	Aggregate traffics to date: Totals 1942/3	Aggregate traffics to date: Increase or decrease	Shares or stock	Prices: Highest 1943	Prices: Lowest 1943	Prices: August 2, 1944	Prices: Yield % (See Notes)
				£	£		£	£	£					
South & Central America	Antofagasta (Chili) & Bolivia	834	23.7.44	23,720	— 6,620	29	856,730	819,930	+ 36,800	Ord. Stk.	15¾	10	10⅜	Nil
	Argentine North Eastern ...	753	22.7.44	17,250	+ 2 682	3	50,160	46,452	+ 3,708	...	7⅜	5	4½	Nil
	Bolivar	174	June, 1944	5,238	+ 370	26	31,756	32,414	— 658	6 p.c. Deb.	22½	18	17½	Nil
	Brazil	—	—	—	—	—	—	—	—	Bonds	23½	19	17½	Nil
	Buenos Ayres & Pacific ...	2,807	22.7.44	112,200	+ 29,700	3	333,960	278,400	+ 55,560	Ord. Stk.	8½	5¾	4½	Nil
	Buenos Ayres Great Southern	5,080	22.7.44	174,300	+ 44,940	3	510,900	459,600	+ 51,300	Ord. Stk.	17⅛	9½	9¾	Nil
	Buenos Ayres Western ...	1,930	22.7.44	63 360	+ 14,640	3	189,780	159,300	+ 30.480	,,	16	9⅜	10⅛	Nil
	Central Argentine	3,700	22.7.44	166,254	+ 54,273	3	522,807	384,720	+ 138,087	,,	10¾	6½	7⅛	Nil
	Do.	—	—	—	—	—	—	—	—	Dfd.	4⅜	3	3⅜	Nil
	Cent. Uruguay of M. Video	972	15.7.44	37,619	+ 6.356	2	77,396	75,361	+ 2,035	Ord. Stk.	7⅜	4½	4½	Nil
	Costa Rica	162	May, 1944	26,525	+ 3,664	48	251,679	173 827	+ 77,852	Stk.	16	12½	14½	Nil
	Dorada	70	June, 1944	26,226	+ 3,993	26	149,309	120,492	+ 28.817	1 Mt. Db.	96	92	96	6½
	Entre Rios	808	22.7.44	23,298	+ 4, 194	3	69,132	62,256	+ 6,876	Ord. Stk.	9	5½	4½	Nil
	Great Western of Brazil ...	1,030	22.7.44	18,600	+ 5,000	29	636,200	455,700	+ 180,500	Ord. Sh.	59/9	24/4½	28/-	Nil
	International of Cl. Amer. ...	794	Apr., 1944	$651,727	+ $8.267	16	$2,985,369	$2,665,812	+ $319,557	—	—	—	—	—
	Interoceanic of Mexico ...	—	—	—	—	—	—	—	—	1st Pref.	2⅜	1⅛	¼	Nil
	La Guaira & Caracas... ...	22½	June, 1944	8,277	+ 82	26	46,430	53,590	— 7,160	5 p.c. Deb.	90	80	79	6½
	Leopoldina	1,918	22.7.44	46.181	+ 7,525	29	1,314,102	977,810	+ 336,292	Ord. Stk.	7¾	4	4½	Nil
	Mexican	483	21.7.44	ps. 363,300	— ps. 18,200	3	ps .1,327,100	ps. 1,156,100	+ ps. 171,000	Ord. Stk.	1⅛	⅜	⅜	Nil
	Midland Uruguay	319	May, 1944	15,947	— 648	48	187,586	169,543	+ 18,043	—	—	—	—	—
	Nitrate	382	15.7.44	6,415	— 674	28	98,921	78.182	+ 20.739	Ord. Sh.	83/9	71 /3	72 6	£3 8/-
	Paraguay Central	274	21.7.44	$60,606	+ $6,436	3	$173,831	$123,900	+ $49,931	Pr. Li. Stk.	75	51½	71	8½
	Peruvian Corporation ...	1,059	June, 1944 £	121,351	+ 16,617	52	1,330,647	1,045,065	+ 285,582	Pref.	17⅛	10½	10⅛	Nil
	Salvador	100	Apr., 1944	c 152,000	+ c 30,000	43	c 1,310,000	c 1,034,000	+ c 276,000	—	—	—	—	—
	San Paulo	153½	—	—	—	—	—	—	—	Ord. Stk.	71	57	47	£4 5/1
	Taltal	160	June, 1944	5,530	+ 2,925	52	65,330	48,811	+ 16,519	Ord. Sh.	37/6	20/-	17/-	Nil
	United of Havana	1,301	22.7.44	44,006	— 3,769	3	141,364	172.666	— 31,302	Ord. Stk.,	8⅝	3½	3	Nil
	Uruguay Northern	73	May, 1944	1,581	— 131	48	16,314	15,817	+ 497	—	—	—	—	—
Canada	Canadian Pacific	17,034	21.7.44	1,215,400	— 29,400	29	34,547,000	30,824,800	+ 3,722,200	Ord. Stk.	18	13⅜	17	1½
India†	Barsi Light	202	May, 1944	23,250	+ 4,058	9	51,682	45,240	+ 6,442	—	—	—	—	—
	Bengal-Nagpur	3,267	May, 1944	1,008,600	— 120,600	9	2,094,450	2,177,850	— 83,400	Ord. Stk.	104½	101½	110½	3½
	Madras & Southern Mahratta	2,939	Mar., 1944	358,125	— 7,925	52	10,447,866	8,913,942	+ 1,533,924	—	—	—	—	—
	South Indian	2,349	20.12.43	199,410	+ 24,449	37	5,321,558	4,562,445	+ 750,113	—	—	—	—	—
Various	Egyptian Delta	607	31.5.44	19,629	+ 4,960	9	114,384	84,476	+ 29,908	Prf. Sh.	6 1/16	2⅜	4	Nil
	Manila	—	—	—	—	—	—	—	—	B. Deb.	45	32	48	Nil
	Midland of W. Australia ...	277	May, 1944	21,833	— 12.686	48	312,986	355,514	— 42,528	Inc. Deb.	101	93	100½	£4 19/6
	Nigerian	1,900	29.4.44	276,142	— 43,758	4	276,142	319,900	— 43,758	—	—	—	—	—
	South Africa	13,291	10.6.44	843,199	+ 7,292	9	8,624,126	8,173,327	+ 450,799	—	—	—	—	—
	Victoria	4,774	March, 1944	1,363,928	— 222,955	—	—	—	—	—	—	—	—	—

Note. Yields are based on the approximate current price and are within a fraction of ⅛. Argentine traffics are given in sterling calculated @ 16½ pesos to the £

† Receipts are calculated @ 1s. 6d. to the rupee